ROTEM®
Control & Management

Communicator

User & Installation Manual
P/N: 110048

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WARRANTY & LIMITATION OF LIABILITY

1. ROTEM warrants that the product shall be free of defects in materials or workmanship and will conform to the technical specification for a period of 1 (one) year from the date of initial installation on site (the "warranty period").

2. Load cells are not covered by ROTEM's warranty.

3. ROTEM warrants that during said warranty period, any item/items or part/parts of equipment found defective with respect to materials or workmanship or which do not conform to the technical specification shall be repaired or replaced (at ROTEM's sole discretion), free of charge.

4. During the warranty period, in the event of an alleged defect, authorized resellers in relevant regions should be notified as soon as possible from the date of noticing the said defect, but no longer than thirty (30) days from such a discovery. The report shall include (1) a short description of the defects noticed (2) type of card / component and its matching serial number.

5. ROTEM's sole liability under this warranty is the repair or replacement of the defective item of product.

Conditions and Limitations

1. ROTEM will not be responsible for any labor costs or expenses associated with replacement of defective items or other parts of the product or repair.

2. This warranty shall not cover: (i) product or part therein which has been modified (without prior written approval of ROTEM), or (ii) product or part therein which has not handled or installed by an authorized reseller of ROTEM or (iii) product or part therein which has either been handled or installed not in strict accordance with ROTEM's instructions, (iv) products which were used for a function other than the agriculture industry.

3. This warranty will not apply in the following cases: (i) if all components of the product are not originally supplied by ROTEM (ii) the defect is the result of an act of nature, lighting strikes, electrical power surge or interruption of electricity (iii) the defect is the result of accident, misuse, abuse, alteration, neglect, improper or unauthorized maintenance or repair.

ROTEM warns and alerts all users that the Product is inherently complex and may not be completely free of errors. ROTEM's products are designed and manufactured to provide reliable operation. Strict tests and quality control procedures are applied to every product. However, the possibility that something may fail beyond our control exists. Since these products are designed to operate climate control and other systems in confined livestock environments, where failure may cause severe damage, the user should provide adequate backup and alarm systems. These are to operate critical systems even in case of a ROTEM system failure. Neglecting to provide such a backup will be regarded as the user's willingness to accept the risk of loss, injury and financial damage.

In no event will ROTEM be liable to a user or any third party for any direct, indirect, special, consequential or incidental damages, including but not limited to any damage or injury to business earnings, lost profits or goodwill, personal injury, costs of delay, any failure of delivery, costs of lost or damaged data or documentation, lost or damaged products or goods, lost sales, lost orders, lost income.

Except for the above express warranty, ROTEM makes no other warranties, express or implied, relating to the products. ROTEM disclaims and excludes the implied warranties of merchantability and fitness for a particular purpose. No person is authorized to make any other warranty or representation concerning the performance of the products other than as provided by ROTEM.

Software Version: **3.04**

Document Version: **2.6**

ATTENTION!

The Communicator is the central communication center and provides critical alarm warnings.

THEREFORE IT IS CRITICAL THAT YOU CARRY OUT THE FOLLOWING MAINTENANCE CHECKS ACCORDING TO THE RECOMMENDED SCHEDULE:

1. Daily (minimum weekly) alarm tests. Refer to Setting the Test Schedule, page 12.
2. Monthly battery (minimum between flock) test.
    a) Disconnect power to Communicator
    b) Ensure Communicator transmits SMS and voice alarms.
    c) Wait one hour, and confirm that Communicator continues to transmit alarms.
    d) Restore power to Communicator.
3. Test the Alarm Backup Batteries monthly (refer to page 41).

WARNING! Communicator does not support pre-paid SIM cards. Use a regular card only!

CAUTION Use an exclusive phone line for the Communicator!

NOTE: Sometimes using a phone line via private switchboard might interfere with communication. Rotem recommends using a different line to the Communicator.

CAUTION As a backup to the Communicator, Rotem recommends installing an Emergency Light and Siren system. If the Communicator is unable to transmit alarms via SMS or the telephone (for example there is a complete power failure), the Emergency Light and Siren system sounds an alarm.

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1 FRONT MATTER

This section includes information on the manual and general information.

1.1 Introduction

Rotem manuals provide easy-to-use information regarding the installation, operation, long/short term planning and parts listing (this manual may not deal with all of the above subjects). The table of contents is an outline of the relevant information in this manual.

Read this manual before operating your Rotem product. Using this equipment for any other purpose or in a way not within the operating recommendations specified in this manual will void the warranty and may cause personal injury.

If you have any questions or comments regarding your product please contact your local Rotem dealer.

1.2 Conventions

NOTE: Notes provide important details regarding specific procedures.

CAUTION Cautions alert you to potential damage to the controller if the procedures are not followed carefully.

WARNING! Warnings alert you to potentially hazardous situations which, if not avoided could result in death or personal injury.

1.3 Contact Information

Rotem Control and Management

Email: support@rotem.com
URL: www.rotem.com

1.4 Document Information

Revision History

Revision Level / Date	Section Affected	Description
2.1	Hardware Installation	Board 3.1 added
2.2	4.3.1.2/ 4.3.1.3/ 4.1.15/ 4.3.2.2/ 12.3	Cellular dial out test/ Status reports/ SMS ringtones, Installation summary provided
2.3 / July 2011	9/ 13 / 15.3/ 16	Added support information, updated troubleshooting, added compatibility issues, added appendix
2.4 / May 2012		Formatting
2.5 July 2012	10.5	Formatting, battery test
2.6 / Jan 2013	Appendix B	Added pager codes

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2 PRECAUTIONS

Observe the following precautions when using your unit.

- Grounding
- Checking the Battery Level

2.1 Grounding

CAUTION **Always connect temperature and sensor shields to earth ground. Avoid mixing high voltage wiring with sensor and low voltage wiring.**

CAUTION **Keep the controller as far as possible from heavy contactor boxes and other sources of electrical interference.**

CAUTION **Do not connect communication wire shields, which go from one house to another at both ends. Connect them at one end only. Connection at both ends can cause ground loop currents to flow, which reduce reliability.**

CAUTION **The COM connection for communications is not the shield wire. The COM, RX and TX wires must connect to each other at all controllers.**

2.2 Checking the Battery Level

CAUTION **Check the battery once a year. The output must be 2.7 volts (minimum). Authorized personnel only must replace the battery if the output is below the minimum required level or every five years.**

3 INTRODUCTION TO THE ROTEM COMMUNICATOR

ROTEM Communicator, Version 3.04 is a state-of-the-art alarm and communication center used by famers to monitor and control their Rotem Controllers and accessories.

The Communicator has a user friendly interface with an alfa-numeric keypad, 20 character by 4 line LCD and indicative LED.

- Main Features, page 9
- What's New in Version 3.04, page 9
- User Interface, page 10

3.1 Main Features

- Supports connectivity of several contacts simultaneously on various communication devices (such as dial-up, internet, GSM, USB).
- Voice Solution Plug-in: supports incoming and outgoing phone calls for alarms and status reports. Voice messages can be edited according to personal preference.
- Remote access via dial-up connection
- Send and receive functional text messages (CDMA/GSM networks)
- Pager support
- 8 digital inputs
- 3 dry contact, output relays 5 Amp
- Battery backup

3.2 What's New in Version 3.04

- **SMS ringtones**: To ensure that you don't miss alarm messages, enable this option. It causes your cell phone to play a ringtone when an alarm is sent. Refer to Configuring an SMS Ringtone, page 23.
- **Status reports**: You can receive reports on conditions in the house and animal statistics via SMS (refer to Status Report, page 22) or via a phone (refer to Receiving a Status Report, 17).
- **Cellular dial out tes**t: Ensure that the text and ringtone functions function as required. Refer to Testing the SMS Ringtone, page 21.

In addition, Communicator now sends:

- an acknowledgment that commands sent via SMS were performed
- confirmation of alarm reset

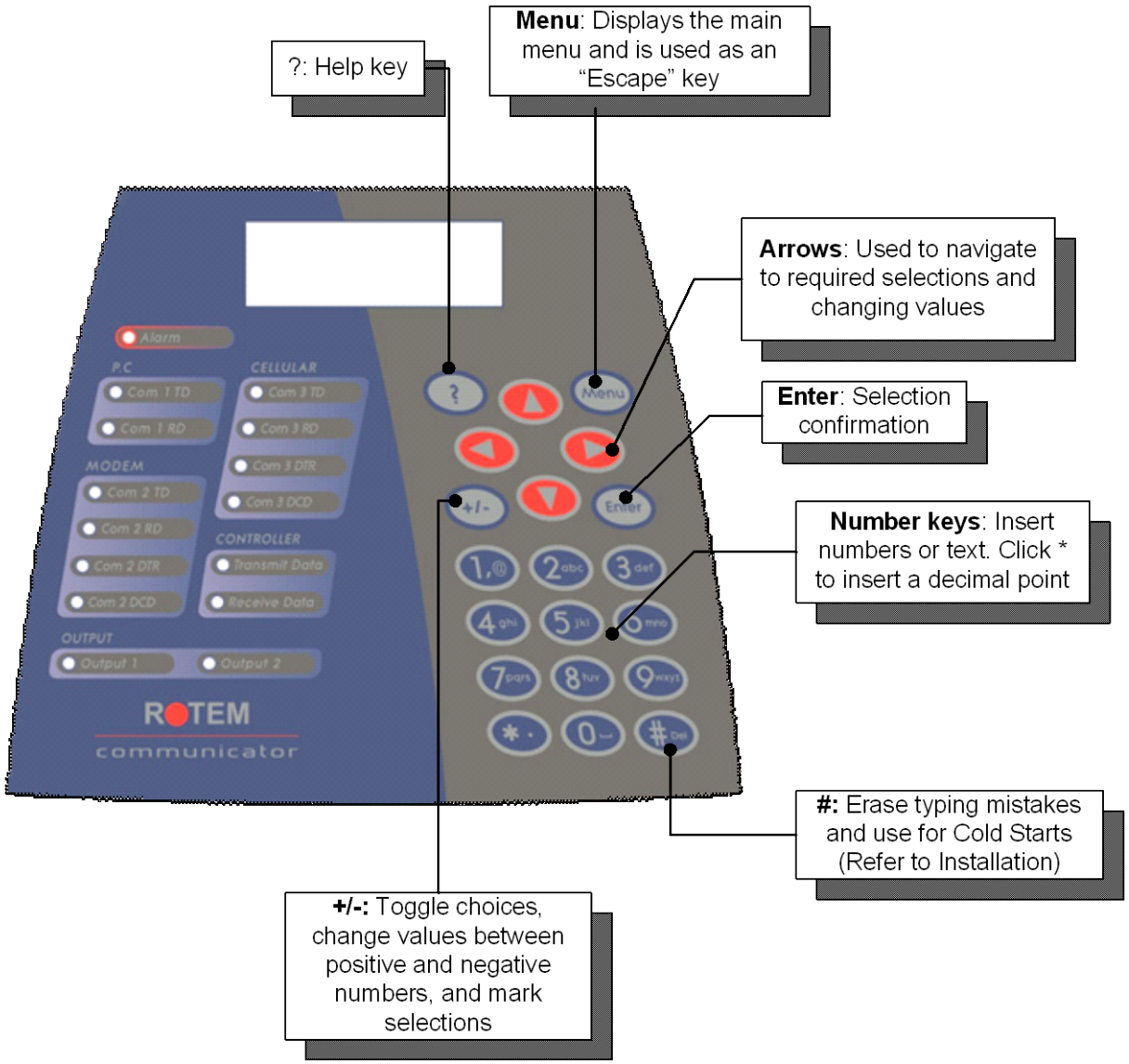
Refer to Introduction to Alarms and Responses, page 37, which explains the alarm distribution process.

3.3 User Interface

The following sections detail how to access and use the Communicator user interface.

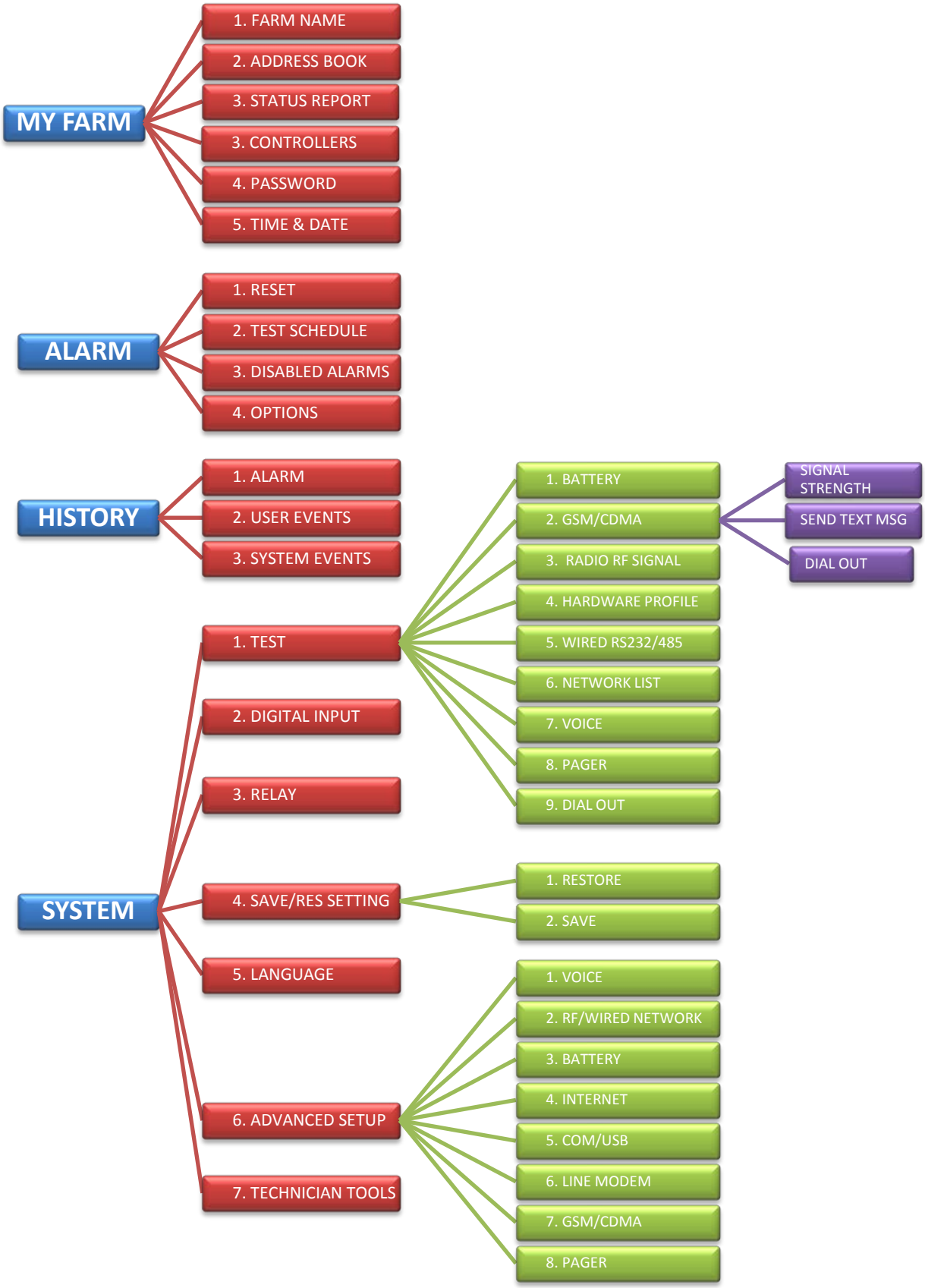
- Front Panel, page 10
- Menu Tree, page 11

3.3.1 Front Panel



LED	Function
PC Com 1 TD/RD	PC is transmitting/receiving data to/from the Communicator
Modem Com 2 TD/RD	Modem is transmitting and receiving data
Modem Com 2 DTR/DCD	Data transmitter ready/Data carrier detect (technician only)
Cellular Com 3 TD/RD	Cellular modem is transmitting and receiving data
Controller Transmit Data Receive Data	Controller relays are transmitting and receiving data
Output 1 Output 2	Non-functional

3.3.2 Menu Tree



4 INITIAL CONFIGURATION

This section describes how to configure the Communicator's initial settings.

- Communication Recommendations, page 12
- Setting the Test Schedule, page 13
- Setting the Language, page 13
- Setting the Farm Site Name, page 13
- Indentifying the Controllers, page 14
- Setting the Time & Date, page 14
- Adding Names to the Address Book, page 14
- Setting the Password, page 15

CAUTION Many of these settings are critical in ensuring the safety and well-being of your stock. These settings must be made as soon as Communicator is installed.

Refer to Installation, page 44 for complete installation instructions.

Refer to the sections listed below for information on other functions:

- Communicator to User Functions, page 16
- Communicator to Controller Functions, page 26
- Communicator to PC Configuration, page 33
- Configuring the Dry Contact Card, page 34
- Communicator Functions, page 35
- Alarms, page 37

NOTE: Before installing a SIM card, disable the PIN code (if the card has this code). Communicator text functions are disabled if the SIM card has a PIN code.

4.1 Communication Recommendations

Rotem strongly recommends:

- enabling both the telephony and SMS functions to transmit alarms (via voice and SMS)
- enabling SMS alarm acknowledgment
- employing a secondary alarm system to act as a backup to Communicator's primary monitoring and alarm system

WARNING! BECAUSE OF LIMITATIONS BUILT INTO SMS DELIVERY SYSTEMS, THERE MAY BE DELAYS IN THE ACTUAL SMS DELIVERY TIME. BY DEFAULT A REMINDER SMS IS TRANSMITTED AFTER TWO MINUTES. IF THE MESSAGE DELIVERY IS DELAYED FOR ANY REASON, INCLUDING DELAYS CAUSED BY THE INFRASTRUCTURE, A REMINDER SMS IS SENT. THEREFORE INCREASING THE DELAY TIME FOR A REMINDER PLACES YOUR LIVESTOCK AT RISK.

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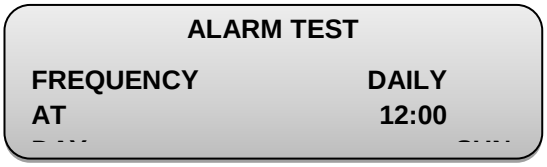
4.2 Setting the Test Schedule

1. Select *ALARM* > *Test Schedule*.
2. Configure the parameters.



- **FREQUENCY:** Daily, weekly, disabled
- **AT:** Time of day to perform the alarm test
- **DAY**: Define the day of the week to perform the alarm test *(this is required only when FREQUENCY=WEEKLY)*

WARNING! **ROTEM STRONGLY RECOMMENDS REGULAR TESTING OF THE ALARMS., DO NOT DISABLE THIS TEST UNLESS THE HOUSE IS EMPTY!**

4.3 Setting the Language

1. Select *SYSTEM* > *Language*.
2. Configure the parameters.

- **LANGUAGE:** Select the required language for the user interface.
- **REGION**: Select the site location.

CAUTION **Select the correct region! The modem functions correctly only when the correct region is selected!**

4.4 Setting the Farm Site Name

- Select *MY FARM* > *Farm /Site Name.*

Define the site's name and reference number. PC network software employs these parameters when sending an alarm. In case several Communicators are present, this will help in identifying each one separately.

NOTE: Be sure that each Communicator has a unique name and number.

4.5 Indentifying the Controllers

1.Select *MY FARM > Controllers*.

2. Identify controllers that are present within the network.

- **PRIMARY UNITS:** Select the number of master controllers the site contains (for example Platinum/AC-2000)
- **SECONDARY UNITS:** Select the number of slave controllers the site contains (for example PigGuard)
- **FOUND-PRIMARY/SECONDARY:** Displays the number of controllers the Communicator was able to locate *(read-only)*

4.6 Setting the Time & Date

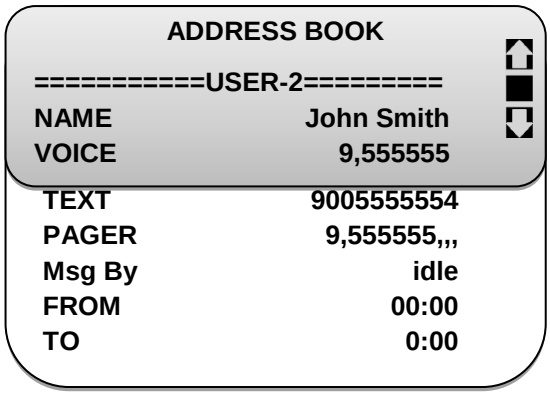
1. Select *MY FARM > Time & Date.*

2. Adjust the time and date in this menu.

- **CLOCK:** hh:mm: (24 hour format; for example 2:15 PM = 14:15)
- **DATE:** dd-mmm-yy: (for example 14-JAN-10)

4.7 Adding Names to the Address Book

- Select *MY FARM > Address Book*.



The address book contains the contact information of up eight users. Communicator contacts these users in the event of an alarm. Priority of contacts is defined by the user number (1-16). Top priority contacts should be entered into the address book first.

CAUTION Rotem strongly recommends entering contact information immediately.

Contact list fields:

- **NAME:** Enter the contact name using the keypad.
- **VOICE:** Enter the phone number for receiving the **VOICE CALL** service (refer to Setting the

Voice , page 16 and Testing the Voice Call Service, page 17 for advanced settings and testing).

- **MOBILE NUMBER:** Enter the mobile number for the text message service.
- **PAGER:** Enter the pager phone number. Refer to Pager Setup, page 20 for options and testing. In addition, refer to Configuring the Dial Delay, page 21.

NOTE: When entering the above numbers, refer to Phone Number Structure, page 15.

- **MSG BY:** Define which services the contact receives *(Idle, Voice, Text, Voice+Text, Pager)*.
- **FROM/TO:** Time frame for receiving messages/calls *(Default – FROM: 0:00; TO: 00:00 – time frame is 24 hours, meaning always receiving messages).*
- **LANGUAGE:** Select the language in which SMS messages are written: *English, Turkish, Russian, Spanish, Thai or Hebrew.*

NOTE: Distribution of the alarm messages is according to the address book list, contact by contact. Each user receives all forms of communication that are selected (**Msg. By** option) before continuing to the next user.

The first user does NOT have a "FROM" or "TO" field to ensure there is always someone that receives the notification from Communicator.

4.7.1 Phone Number Structure

When entering the voice, mobile and pager numbers the phone number structure is:

- 9 (outside line, if needed)**,** # # # # # # #**,,**

The commas are the dial delay. Refer to Configuring the Dial Delay, page 21.

NOTE: To enter a comma, press and hold the “1” button.

4.8 Setting the Password

1. Select *MY FARM > Password.*
2. Define a password and confirm it *(to disable, type “0”)*.

If selected, a password is required for:

- **Locally**: Using the menu items
- **Remotely**: Acknowledge/disabling of alarms via phone

NOTE: If a password is defined, the Communicator locks the system when idle for five minutes or if you press “9” from the main menu.

5 COMMUNICATOR TO USER FUNCTIONS

The following sections detail how to use the:

- Voice, page 16
- Pager, page 20
- Text, page 21
- Common Functions, page 24

5.1 Voice Functions

The following sections detail Communicator's basic and advanced Voice functions.

- Basic Voice Functions, page 16
- Advanced Voice Functions, page 18
- Responding to an Audio Alarm Message, page 19

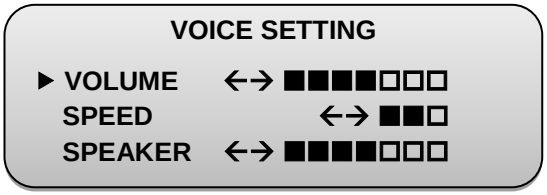
5.1.1 Basic Voice Functions

This section details the basic Voice functions.

- Setting the Voice Parameters, page 16
- Testing Voice Quality, page 16
- Testing the Voice Call Service, page 17
- Testing the Cellular Signal Strength, page 17
- Receiving a Status Report, page 17

5.1.1.1 Setting the Voice Parameters

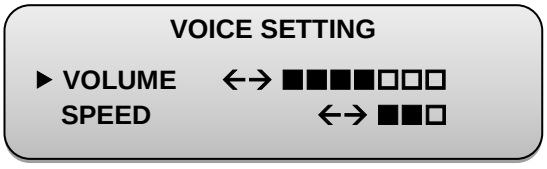
1. Select *SYSTEM* > *Advanced Setup* > *Voice.*



2. Define the speech **VOLUME** and **SPEAKER** volume and it's **SPEED** (if using a TTS voice card).
3. Scroll down to **TEST** and press **ENTER** to hear the selected settings.

5.1.1.2 Testing Voice Quality

1. Select *SYSTEM* > *Test* > *Voice*.
2. Define speech **VOLUME** and **SPEED**.
3. To test, press **ENTER**.



NOTE: Voice Setting and Test Voice perform the same functions.

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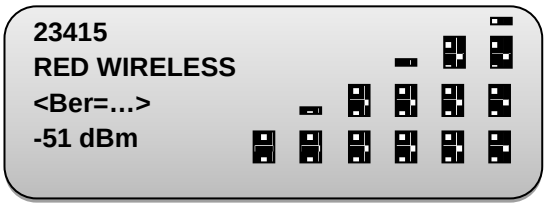
5.1.1.3 Testing the Voice Call Service

This menu tests the **VOICE CALL** service.

1. Select *SYSTEM* > *Test* > *Dial Out*.
2. Enter the required phone number to receive the “Test Call”.
3. Press **ENTER**.

5.1.1.4 Testing the Cellular Signal Strength

- Select *SYSTEM* > *Test* > *GSM/CDMA*.



This screen displays the cellular service provider’s Received Signal Strength Indicator. This screen displays the cellular service provider’s number, name, BER (Bit Error Rate (if available)), the reception bar graph as well as the measured signal reading.

NOTE: Signal strength must be between -113 dBm to -51 dBm.

5.1.1.5 Receiving a Status Report

You can receive a status report over the phone. Refer to Status Report, page 21 for details on the function.

To hear the status report:

1. Call the Communicator phone number.
2. When prompted, select Status report.

5.1.2 Advanced Voice Functions

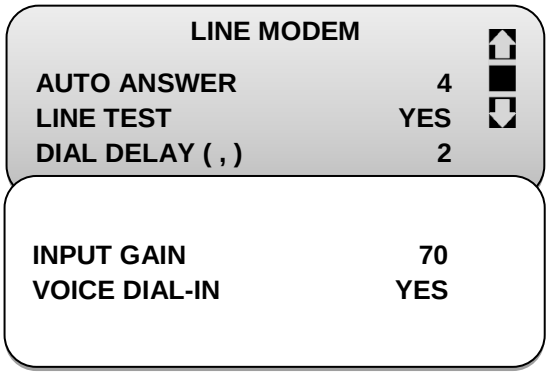
This section details Communicator's advanced Voice functions.

CAUTION Rotem recommends that only trained, authorized technicians configure these functions.

- Configuring the Telephone Modem, page 18
- Defining when Communicator Answers Incoming Calls, page 18

5.1.2.1 Configuring the Telephone Modem

- Select *SYSTEM* > *Advanced Setup* > *Line Modem*.



This screen defines the line modem specifications.

- **AUTO ANSWER**: Number of rings before the Communicator automatically answers a dialed-in call. For example: if set to **4** the Communicator answers a call after four rings.
- **LINE TEST**: Monitors the phone line and activates an alarm in case of disconnection. Default: YES.
- **INPUT GAIN**: For factory use only. If your Communicator is unable to connect your voice dial in phone line, consult your local dealer regarding this feature.
- **VOICE DIAL-IN**: This option enables the user to call in at any time and receive information from the communicator regarding alarms. To receive the information in voice mode only:

1. Call the controller, wait for one ring less than the AUTO ANSWER set parameter number and hang up.

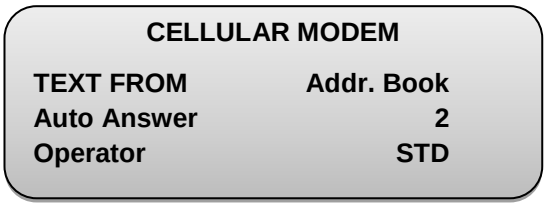
2. Wait at least five seconds (but no longer than 60 seconds) and then call again. Follow the instructions given by the controller.

- If the AUTO ANSWER parameter is set to zero (0), then the Communicator answers in voice mode.
- If the AUTO ANSWER parameter is set to zero and the VOICE DIAL IN parameter is set to **YES**, the controller answers in voice mode every time.

5.1.2.2 Defining when Communicator Answers Incoming Calls

1. Select *SYSTEM* > *Advanced Setup* > *GSM/CDMA*.

2. In Auto Answer, define the number of rings until the Communicator answers through the cellular modem.



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5.1.3 Responding to an Audio Alarm Message

The Voice Dial Out service transmits audio alarm message, via telephony, from Communicator to the contacts entered in the Address Book (page 14). This section details the procedure to follow when an audio alarm is received.

NOTE: This service is provided by the Communicator ONLY if the Address book is properly defined with contacts and the "VOICE" service selected per contact.

CAUTION Communicator only broadcasts its alarm message AFTER someone speaks into the phone. Any word or sound is sufficient.

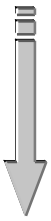
The following illustrates the sequence of **ALARM messages**:

"Good <Morning / Afternoon / Evening> **farm <#> active alarm**.
Please, press 1 to listen."

"House <#> has <#> alarm message<s>."

- Alarm messages for the first house are played and then the following options are available:

✳	Acknowledge	1	Replay house message	9	Play next house message	0	End call



- Enter password (if acknowledging for the first time this call) and press ✳.
- "Please wait… Reset for house <#> successful. <*Next Message / Goodbye*>."
- Right after "Please wait" is heard,
  press ✳ to access the ALARM OPTIONS MENU.

"Entering alarm options for House <#>"

- System reports alarm and then offers the following options:

✳	Disable	0	Return to house messages	1	Replay alarm message	9	Next alarm message

NOTE: Disabling alarms disables them until 12:00 PM the following day.

- **"Disable** <*confirmed / failed*>**!"** message is repeated and returns to **House Alarm Messages**

NOTE: If at any time an incorrect key is pressed or if nothing is pressed, the system repeats itself three times and then ends the call.

5.2 Pager Functions

The following sections detail the Communicator's basic and advanced Pager functions.

- Basic Pager Functions, page 20
- Advanced Pager Functions, page 21

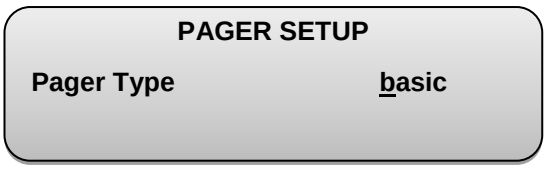
5.2.1 Basic Pager Functions

This section details the basic Pager functions.

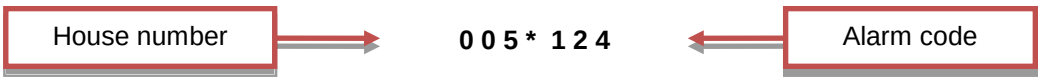
- Pager Setup
- Pager Test

5.2.1.1 Pager Setup

1. *Select* SYSTEM > Advanced Setup > Pager.
2. Define the pager type, either **BASIC** or **ENHANCED** by using the **+/-** key.



- BASIC: Pages are per house in the following format:



NOTE: If a house has more than one alarm active, then the multiple alarms code is sent (code: 255).

- **ENHANCED**: Pages are per house and can contain multiple alarms per page in the following format:

HHH*AAA*AAA*AAAHHH*AAA*AAA**

  - HHH: House number (two stars separate between houses)
  - AAA: Alarm code

5.2.1.2 Pager Test

1. Select *SYSTEM > Test > Pager*.
2. Enter the pager phone number and press **ENTER**.

This feature tests the **PAGER** service. The pager number should include a dial delay. When dialing a pager service, there is usually a delay between the moment when the call is answered and when the message is recorded. For example: "*Leave a message for Mr. Smith*" takes about three seconds. The Dial Delay parameter is the amount of time that Communicator waits before transmitting its pager alert. Refer to Configuring the Dial Delay, page 21 for more information. Delay is also required when dialing for an outside line.

For example: If the required delay is three seconds and delay is set to two seconds, then two commas are required. The phone number structure is:

- 9 (outside line, if need), ###-####,,

NOTE: To enter a comma, press and hold the "1" button.

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5.2.2 Advanced Pager Functions

The following section details the advanced Pager functions.

5.2.2.1 Configuring the Dial Delay

- Select *SYSTEM* > *Advanced Setup* > *Line Modem*.

When dialing a pager service, some services require additional tone menu browsing (interactive voice response). Use this feature to set a delay between the phone number and the tone browsing. Each "**,**"represents the number of seconds in delay between the phone number and the next browsing number. Refer to Pager Test, page 20 for more information.

5.3 Text Functions

The following sections detail the Communicator basic and advanced Text functions.

- Basic Text Functions, page 21
- Advanced Text Functions, page 23
- Text Message Responses, page 23

5.3.1 Basic Text Functions

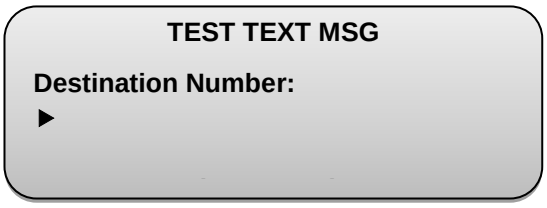
The following sections detail the basic Text functions.

- Testing the Text Function, page 21
- Testing the SMS Ringtone, page 21
- Status Report, page 22

5.3.1.1 Testing the Text Function

This menu enables testing the text function.

1. Select *SYSTEM* > *TEST* > *GSM/CDMA* > *SEND TEXT MSG.*



2. Enter in the required mobile phone number to receive the "Test Text" and press ENTER.
3. Confirm that the mobile phone received the following text message:
"Your Communicator is ready to send alerts via text messages."

5.3.1.2 Testing the SMS Ringtone

This menu tests the **SMS ringtone** service.

1. Select *SYSTEM* > *Test* > *Dial Out*.
2. Enter the required phone number to receive the "Test Call".
3. Press **ENTER**.

5.3.1.3 Status Report

Upon a user request, Communicator sends a status report on basic house functions and animal statistics. The report includes the following specifications:

- Target Temp
- Average Temp
- Vent Level
- Vent Mode (minimum ventilation, natural, tunnel)
- Humidity
- Weight (current average animal weight)
- Pressure (static pressure)
- Water Control (daily water consumption)
- Feed Count (daily feed consumption)
- Mortality

By default, the report only includes Target Temp, Average Temp, Vent Level and Humidity.

NOTE: Platinum Controllers, Version 3.0 and higher, support this function.

To select the parameters:

1. Select *SYSTEM* > *Advanced Setup* > *GSM/CDMA*.
2. Use the ***+/-*** key to select the required parameter.
3. Press **Enter** to select/deselect the parameter.
4. Press Save.

The parameters are configured.

To receive a status report:

- **Receiving the Report for One House**

?SX > 'Send SMS' to the Communicator cell phone number.
? = Start of message
S = Status report
X = Represents house number (can be any positive number from 1 - 64)

- **Receiving the Report for Several Houses**

?SX#X#X > 'Send SMS' to the Communicator cell phone number
? = Start of message
S = Status report
X = Represents house number (can be any positive number from 1-64)
= Sign separates between every house number

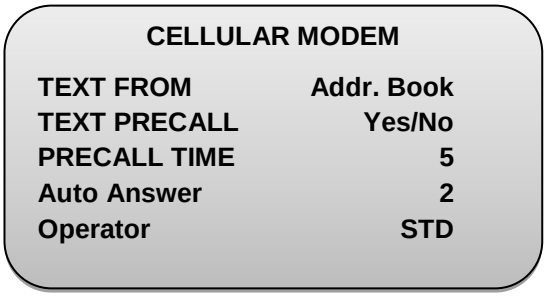
5.3.2 Advanced Text Functions

The following sections detail the advanced Text functions.

- Defining Who Can Text Communicator
- Configuring an SMS Ringtone

5.3.2.1 Defining Who Can Text Communicator

1. Select *SYSTEM* > *Advanced Setup* > *GSM/CDMA*.



This menu defines which cell phones can send messages to the Communicator via text.

2. In the *Text From* field, choose:
   - o **Addr. Book** (only those addresses which are text enabled) or
   - o **Any** (enables sending text via any cell phone).

NOTE: Acknowledgement messages are only sent when Addr. Book is selected.

5.3.2.2 Configuring an SMS Ringtone

If desired, a ringtone can play when an SMS message from Communicator arrives, thereby alerting you of an upcoming message.

1. Select *SYSTEM* > *Advanced Setup* > *GSM/CDMA*.
2. In the Text Precall field, select **Yes**.
3. In the Precall time, enter the time (in seconds). This parameter ensures that there is sufficient time for the phone to ring before the SMS tone plays.

5.3.3 Text Message Responses

This section details how to respond to a text message sent from Communicator to a mobile phone. The response can reset a siren, an alarm, or acknowledge the messages.

Event Codes, page 38 lists the events corresponding to the codes sent in a text message.

- Resetting the Siren, page 23
- Resetting the Alarm, page 24
- Acknowledging a Message, page 24

5.3.3.1 Resetting the Siren

NOTE: After typing the text message, press the 'Send' button to send it to the Communicator.

In the procedures below, the **highlighted text** shows the SMS text to be sent.

- **Resetting the Siren of One House**

!RX > 'Send SMS' to the Communicator cell phone number.

! = Start of message

R = Reset

X = Represents house number (can be any positive number from 1-64)

- **Resetting the Siren of Several Houses**

!RX#X#X > 'Send SMS' to the Communicator cell phone number

! = Start of message

R = Reset

X = Represents house number (can be any positive number from 1-64)

= Sign separates between every house number

- **Resetting the Siren for All Houses**

!RALL > 'Send' to the Communicator cell phone number

! = Start of message

R = Reset

ALL = Can be typed both in capital letters or small letters.

5.3.3.2 Resetting the Alarm

To reset all the alarms, send the following text message:

!C > 'Send' to the Communicator cell phone number

! = Start of message

C = Communicator

5.3.3.3 Acknowledging a Message

If Message Repeat is enabled (refer to page 39), Communicator continues to send alarms until an acknowledgement is sent.

- **Requesting a Response for Every Sent Text Message**

!AON > 'Send' to the Communicator cell phone number

! = Start of message

A = Acknowledgement

- **Canceling a Response for Every Sent Text Message**

!AOFF > 'Send' to the Communicator cell phone number

! = Start of message

A = Acknowledgement.

5.4 Common Functions

The following sections detail functions which are common to all Communicator to User tasks.

- Selecting the CDMA Operator, page 24
- Technician Tools, page 25

5.4.1 Selecting the CDMA Operator

- Select *SYSTEM* > *Advanced Setup* > *GSM/CDMA*

The **OPERATOR** menu enables a user to choose to choose one of the following operators:

- STD (standard)
- Sprint
- Verizon

NOTE: This menu only appears if a cellular modem (CDMA) is present.

5.4.2 Technician Tools

- Select *SYSTEM > Technician Tools.*

This menu provides testing tools used by an **authorized** technician only.

- Test
- Hyper Terminal
- Monitor

5.4.2.1 Test

- **PHONE L**INE: Measures the line voltage.
- **INTERNET**: (TBD).
- **RELAYS**: Toggle Relays 1, 2 and Alarm relay status by pressing ENTER.
- **DIGITAL INPUT**: Displays the status of the eight digital inputs.
- **MEMORY**: Performs EEPROM test by pressing the MENU key.
- **KEYBOARD**: Tests the functionality of each key. Test keys by pressing them and verifying visually that the right key is displayed on the screen.

5.4.2.2 Hyper Terminal

This is a dedicated function for system integrators ONLY!

5.4.2.3 Monitor

TBD

6 COMMUNICATOR TO CONTROLLER FUNCTIONS

The following sections detail how to configure the connections between Communicator and the controllers (local communication).

- Network Connection Configuration, page 26
- RS-232 Connection, page 29
- RS-485 Connection, page 30
- RF Connection, page 31
- Channel/Signal Tests, page 32

6.1 Network Connection Configuration

The following sections detail how to configure the baud rate and communication between the Communicator (master) and its subunits (slaves). Communication can be via RS-232, RS-485, or RF .

- Routing Methods, page 26
- Configuring the Channel Settings, page 27
- Displaying the Controllers, page 28
- Listing the Network Devices, page 28

6.1.1 Routing Methods

There are two common routing methods for running the communications connections; Daisy Chain (recommended) and Star connection (not recommended).

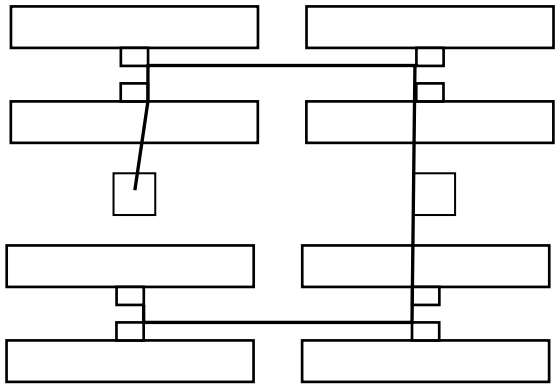


Figure 1: Daisy Chain

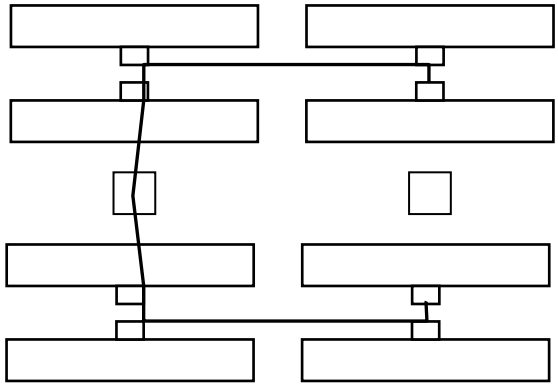


Figure 2: Daisy and Star Combination

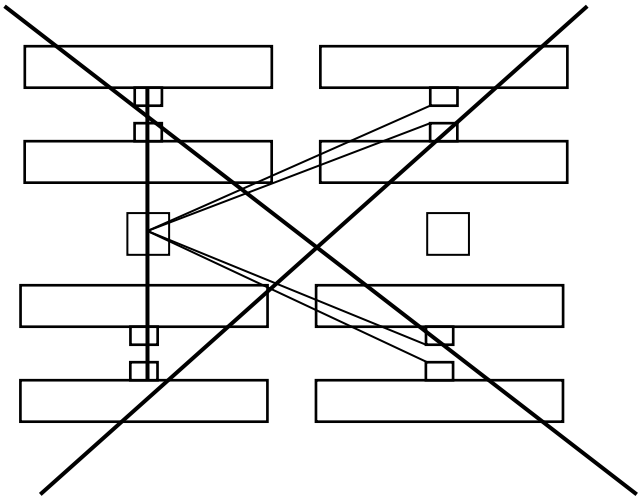
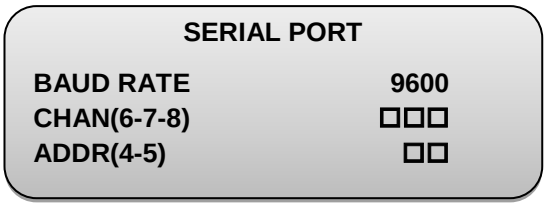


Figure 3: Star Routing

NOTE: Employing a Rotem RS-232 or RS-485 Repeater enables star routing. Refer to the relevant manuals for details.

6.1.2 Configuring the Channel Settings

- Select *SYSTEM* > *Advanced Setup* > *RF/Wired Network*.



This menu defines data rate and settings between the Communicator and its subunits.

NOTE: This menu does **not** define the data rates to the PC.

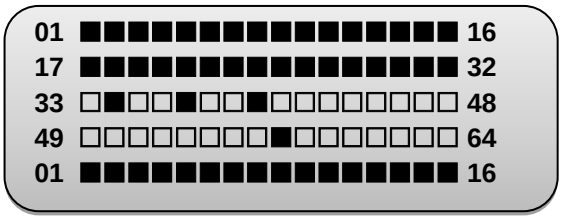
- **Baud Rate:** For communication to operate properly, set all controllers to the same Baud Rate.

NOTE: Set the Baud Rate to 9600 BPS. Incorrect definitions can result in alarms for missing controllers and communication from unidentified controllers. For detailed information on setting the RS-232/485 baud rate, refer to RS-232 Approximate Distances and Baud Rate, page 30 and Setting up the RS-485 Connection, page 31.

- **CHANNEL:** Sets the module's hopping channel number. A channel is one of three layers of addressing available to the XStream radio modem. For modules to communicate with each other, they must have the same channel number since each network uses a different hopping sequence. Different channels should be used to prevent modules from listening to transmissions from one another in the same network.
- **ADDRESS**: *For future use:* make sure it is in the OFF position (both squares remain unshaded).

6.1.3 Displaying the Controllers

- Press 0



This screen displays all the controllers that are connected to the system.

■ - Represents a recognized controller

□ - No controller is recognized

NOTE: The letter 'F' indicates that communication to that house has been lost. The 'F' continues to appear until the unit is reset (disconnect and reconnect the power).

6.1.4 Listing the Network Devices

- Select *SYSTEM* > *Test* > *Network List.*

- **PRIMARY FOUND**: Displays the number of primary units found in the network.
- **SECONDARY FOUND**: Displays the number of secondary units found in the network.
- **SCAN NETWORK?:** Use **+/-** key to select YES or NO and then press **ENTER** to scan the network to find/remove primary or secondary units.

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6.2 RS-232 Connection

The following sections detail how to set up an RS-232 connection between the Communicator and the controllers.

- Setting up the RS-232 Connection, page 29
- RS-232 Approximate Distances and Baud Rate, page 30

6.2.1 Setting up the RS-232 Connection

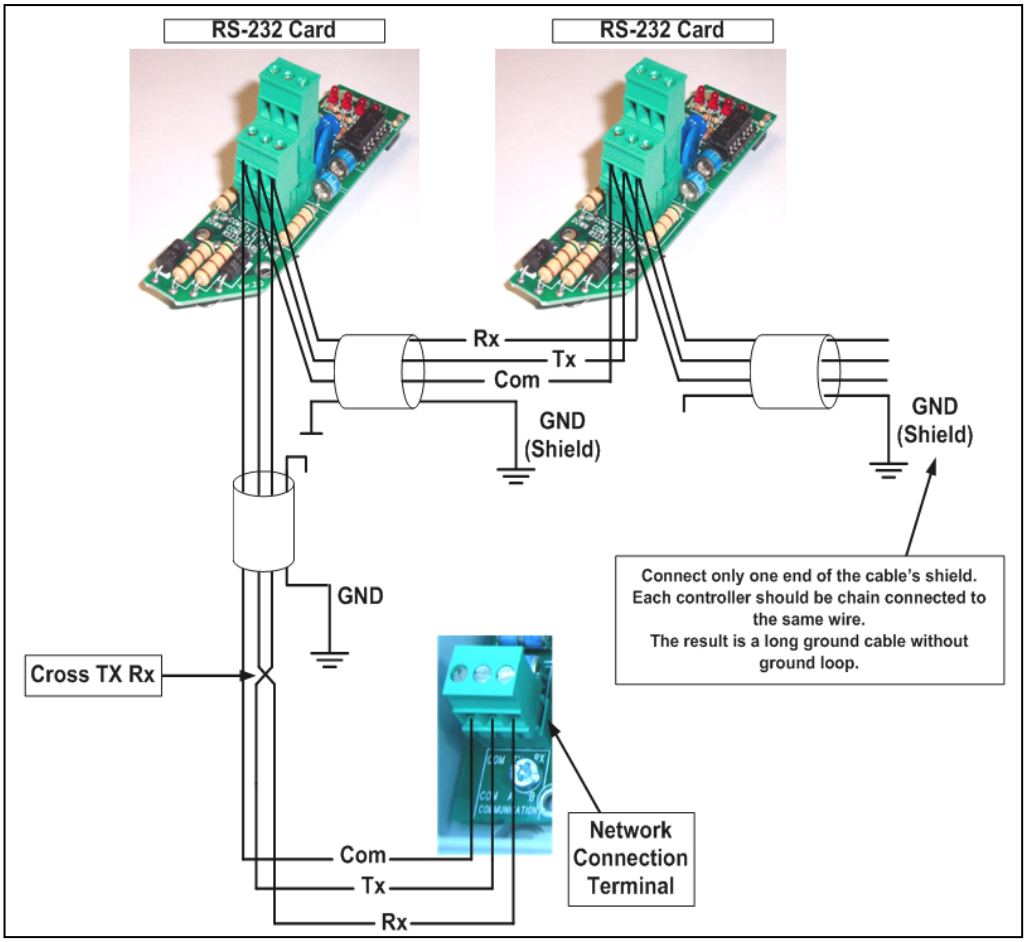

Figure 4: Connecting the External Connection Box to Rotem's Controllers via RS-232 Cards

NOTE: The cards shown are controller cards.

- The cable between the external connection box and the controllers should be a 3 Wire Shielded Cable (22 AWG minimum).
- This cable is daisy-chained to all controllers and to the communication line of the external connection box in the following manner:
- The Black wire (COMMON) is connected to the COMMON in the communication terminal of the controller.
- The Red wire, TX in the connection box, is connected to RX in the Controller.
- The Green wire, RX in the connection box, is connected to TX in the Controller.
- The shield should be connected to the earth (Safety Ground).

CAUTION Connect the shield (safety ground) only on one side!

6.2.2 RS-232 Approximate Distances and Baud Rate

- For one controller:
  - ~2000 meters (~6500 feet): 9600 Baud
  - ~2500 meters (~8200 feet): 4800 Baud
  - ~3000 meters (~9800 feet): 2400 Baud
- For 10 controllers:
  - ~1200 meter (~4000 feet): 9600 Baud
  - ~1800 meter (~6000 feet): 4800 Baud
  - ~2400 meter (~7870 feet): 2400 Baud

NOTE: Baud rate depends on cable length and on the number of controllers.

6.3 RS-485 Connection

The following sections detail how to set up an RS-485 connection between the Communicator and the controllers.

- Setting up the RS-485 Connection, page 30
- RS-485 Approximate Distances & Baud Rates, page 31

6.3.1 Setting up the RS-485 Connection

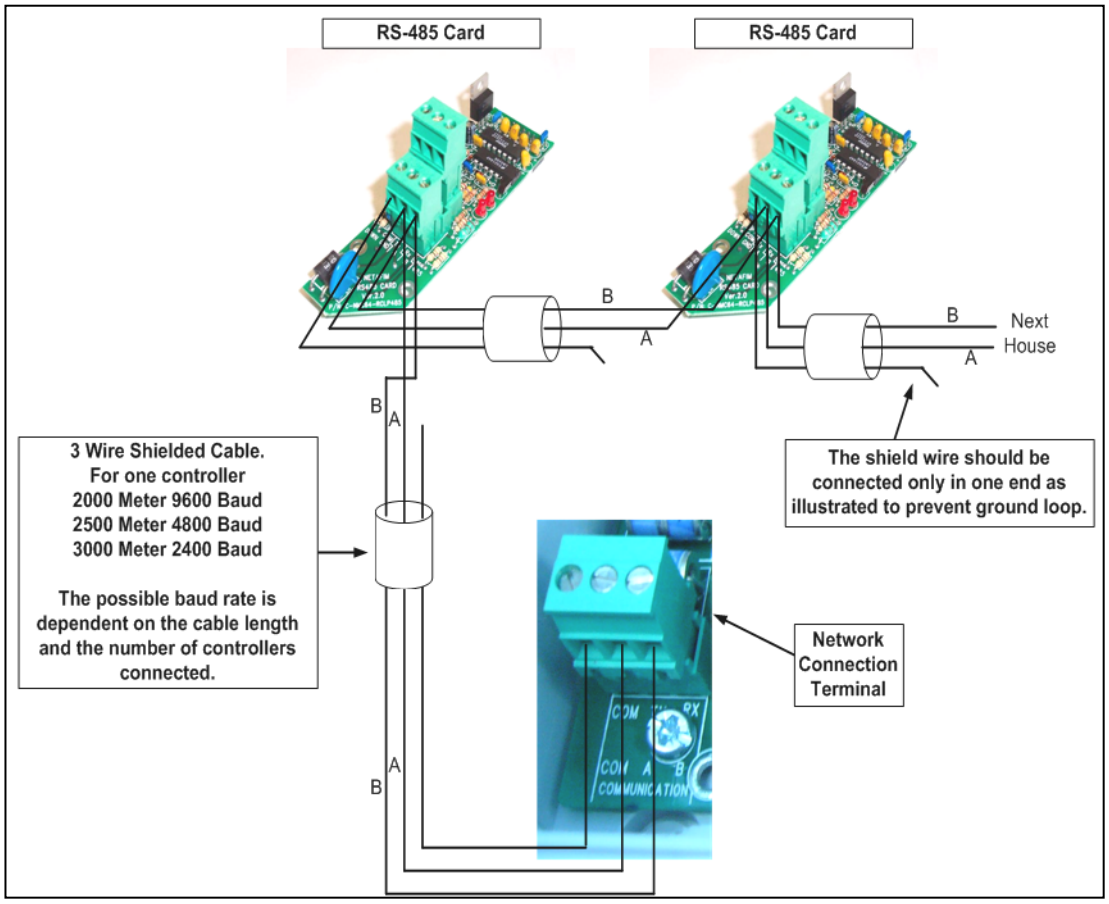

Figure 5: Connecting the External Connection box to ROTEM'S Controllers via RS-485 Cards

NOTE: The cards shown are controller cards.

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- The cable between the external connection box and the controllers should be a 2-wire shielded cable.
- This cable is daisy-chained to all controllers and to exrternal connection box:
    - Connect the shield to the COM terminal of the controller on one side and leave unconnected on the other side.
    - Red wire to terminal A of the controller and terminal A of the external connection box.
    - Green wire to terminal B of the controller and terminal B of the external connection box.

6.3.2 RS-485 Approximate Distances & Baud Rates

- For one controller:
    - ~2000 meters (~6500 feet): 9600 Baud
    - ~2500 meters (~8200 feet): 4800 Baud
    - ~3000 meters (~9800 feet): 2400 Baud
- For 10 controllers:
    - ~1200 meter (~4000 feet): 9600 Baud
    - ~1800 meter (~6000 feet): 4800 Baud
    - ~2400 meter (~7870 feet): 2400 Baud

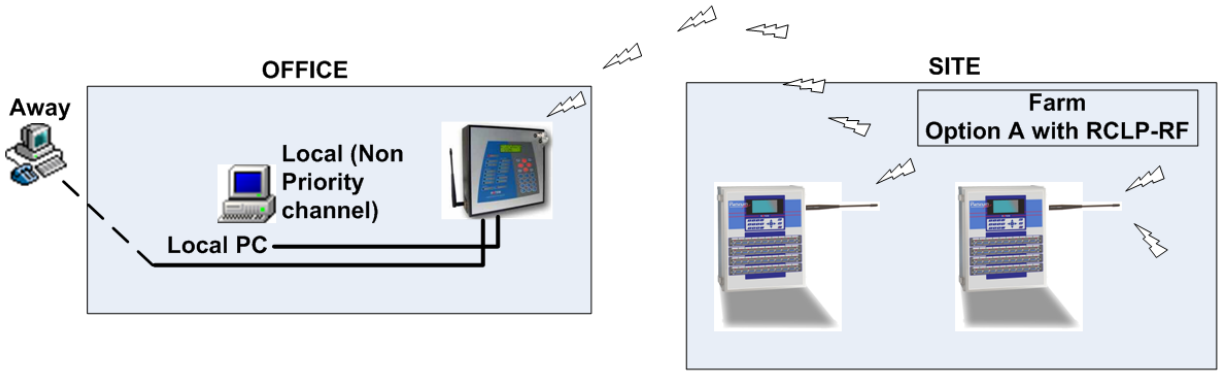
NOTE: Baud rate is dependent on cable length and number of controllers.

6.4 RF Connection

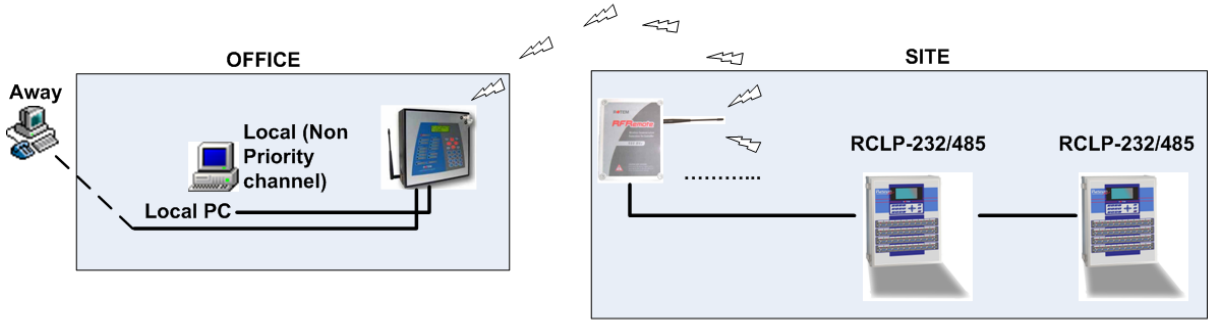
The following sections detail how to set up an RF connection to the controllers.

- Option A with Platinum RF (RCLP-RF), page 31
- Option B with Platinum RF Remote, page 32

6.4.1 Option A with Platinum RF (RCLP-RF)



6.4.2 Option B with Platinum RF Remote



6.5 Channel/Signal Tests

The following sections detail how to test the controller communication channels.

- Testing the RS-232/485 Channel
- Testing the Radio RF Signal

6.5.1 Testing the RS-232/485 Channel

- Select *SYSTEM* > *Test* > *Wired 232/485*.

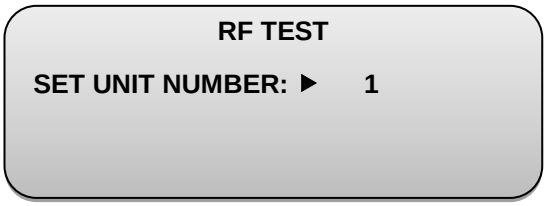
This menu tests the RS-232/485 communication channel.

Enter the required unit number and press **ENTER** to start and stop the test. The screen displays a shaded box in the Tx when transmitting and a shaded box by the Rx when receiving (when functioning properly the shading switches back and forth between the two boxes).

NOTE: If the checkbox remains blank, check all connections between the Communicator and the controller.

6.5.2 Testing the Radio RF Signal

- Select *SYSTEM* > *Test* > *Radio RF Signal.*



This menu tests the RF communication channel.

Enter the required unit number and press **ENTER**. The screen displays the reception bar graph as well as the measured signal reading once available (testing is continuous until exiting this menu).

Refer to RF Connection, page 31 for information on configuring the RF network.

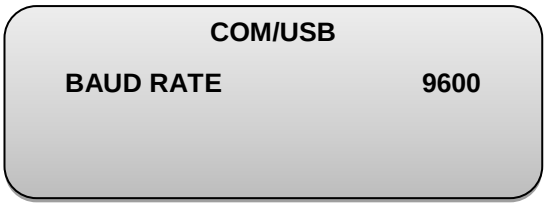
7 COMMUNICATOR TO PC CONFIGURATION

The following sections detail the communication between the Communicator and the PC.

- Defining the Communication Speed with the Local PC
- Configuring the Data Connection

7.1 Defining the Communication Speed with the Local PC

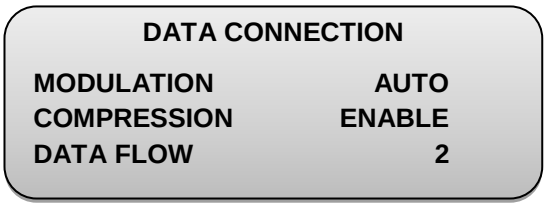
- Select *SYSTEM* > *Advanced Setup* > *COM/USB.*



This screen defines the communication speed (**BAUD RATE**) corresponding with the local PC.

7.2 Configuring the Data Connection

- Select *SYSTEM* > *Advanced Setup* > *Line Modem* > *Advanced.*



The Communicator can compress data and send it faster. Use this screen to increase the transfer rate between the Communicator and a remote modem.

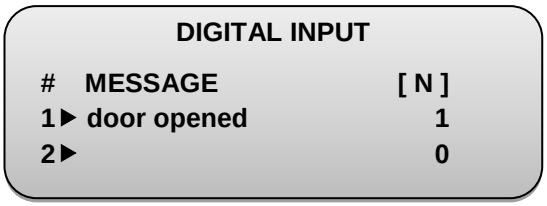
- **MODULATION**: Auto or V34 transmission. During connect negotiation at which the modems have determined which modulation and rate will be used, meaning before any error.
- **COMPRESSION**: Enables or disables data compression performed by the modem, also known as hardware compression. It reduces the amount of time required to transfer data. Make sure the modem you are connected to can read and decompress the received data.
- **DATA FLOW**: This feature enables the hardware to vary the data transmission rate.

CAUTION Rotem recommends that the user leave the Advanced menu items at their default settings.

8 CONFIGURING THE DRY CONTACT CARD

The following section details how to set up the dry contact cards. Communicator supports an eight dry contact digital input card that can be programmed as a normally open / close dry contact input. These inputs can be connected to a wide variety of sensors such as generator operation, magnetic door or window, thermostat, etc.

1. Select *SYSTEM* > *Digital Input.*



2.Use the alphanumeric keypad to enter in the message and press **ENTER**.

3. Define **[N]** as **1** or **0**

The '[N]' column's two possibilities:

- 0: Represents the open contact (Normally Open). If there is a change from the usual state (closed state), an alarm occurs.
- **1**: Represents closed contact (Normally Closed). If there is a change from the usual state (opened state), an alarm occurs.

The figure above serves as an example of a digital input program. The programmed line No. 1 is set as normally closed for the house door. The message for this program is “door opened”. If the door opens, the dry contact is disconnected and changes from 1 to 0. This change triggers the alarm and the message “door opened” is sent to all addresses programmed in the Adding Names to the Address Book (page 14).

9 COMMUNICATOR FUNCTIONS

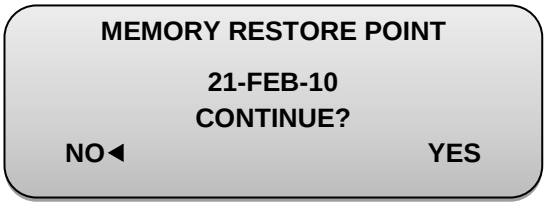
The following sections detail functions which relate to the Communicator hardware and software.

- Saving and Restoring System Settings, page 35
- Test Functions, page 35
- Viewing Relay Settings, page 36

9.1 Saving and Restoring System Settings

- Select *SYSTEM* > *Save/Res Setting* > *Restore.*

1. RESTORE: Use this feature to restore all settings that were previously saved *(restore point is the date of the last save performed)*.



- Select *SYSTEM* > *Save/Res Setting* > *Save.*

2. SAVE: Use this feature to save all settings (*once a SAVE is performed, this is the new RESTORE point*).

9.2 Test Functions

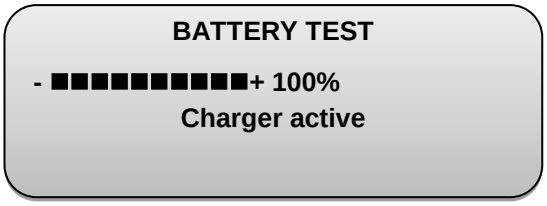
The following section details how to test Communicator functions.

- Testing the CPU Battery, page 35
- Viewing Device Status, page 36
- Viewing the Software and Hardware Version, page 36

9.2.1 3535Testing the CPU Battery

This section details the CPU battery test.

- Select *SYSTEM* > *Test* > *Battery*.



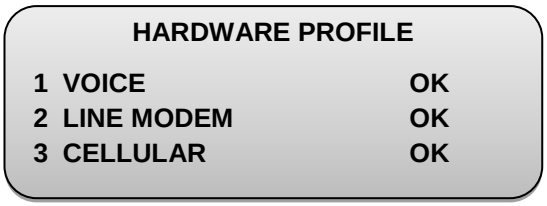
To test the battery:

1. Unplug the unit.
2. View the battery test.

CAUTION In addtion to this test, refer to Testing the Alarm Backup Batteries, page 41.

9.2.2 Viewing Device Status

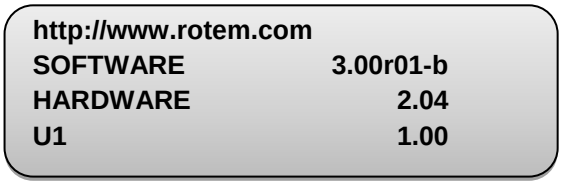
- Select *SYSTEM* > *Test* > *Hardware Profile*.



View functionality status of all possible installed devices.

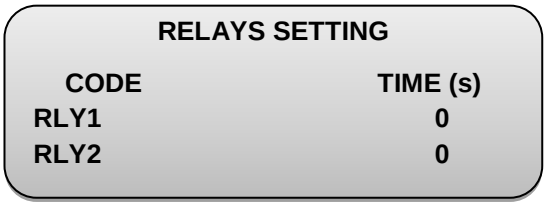
9.2.3 Viewing the Software and Hardware Version

- Press ?



This screen displays the software and hardware version numbers.

9.3 Viewing Relay Settings



- Select *SYSTEM* > *Relay.*

TBD

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10 ALARMS

This section details how to:

- Configure advanced alarm settings.
- View the history of alarms and events

Basic Alarm functions are defined in the Initial Configuration, page 12.

- Introduction to Alarms and Responses, page 37
- Event Codes, page 38
- Advanced Alarm Settings, page 38
- Alarm and Events History, page 40

10.1 Introduction to Alarms and Responses

Figure 6 illustrates the alarm sequence. The flow ends when an alarm is acknowledged or is no longer active.

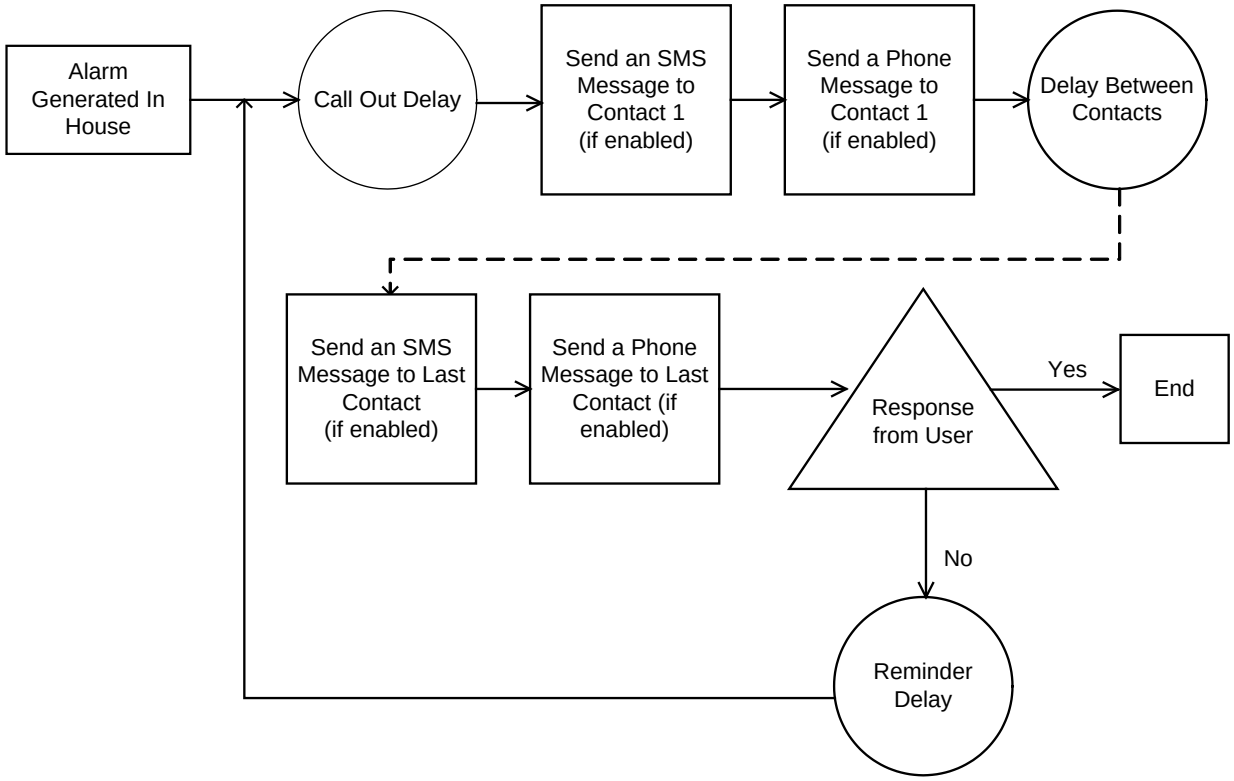


Figure 6: Alarm Flow Chart

Responding to alarms can be done over:

- **Land line**: Via verbal and interactive messaging
- **Cellular**: Via text messaging

NOTE: Communicator does not support verbal and interactive messaging via cell phones.

10.2 Event Codes

Table 1 lists the event codes sent in text messages.

Table 1: Event Codes

Event Code	LCD Message
1	"power off "
2	"power on"
3	"cold start"
4	"error-01"
5	"test running"
6, 7 , 9, 10, 11, 12, 16, 17	"fail"
8, 13	"no answer "
14	"page sent "
18	"text sent "
19, 20	"ack alarm "
21	"disable alarm "
22, 23, 24	"low signal"

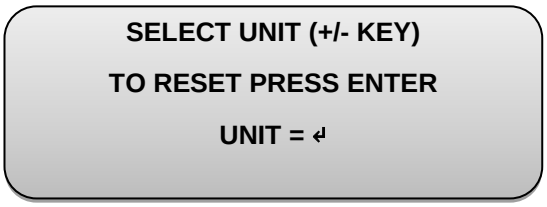
10.3 Advanced Alarm Settings

The following sections detail the advanced alarm functions. Basic alarms are set up in the Initial Configuration.

- Reseting the Alarms, page 38
- Disabling Alarms, page 39
- Defining the Message Delay, page 39
- Defining the Message Repeat Parameter, page 39
- Defining the Internal Alarms, page 40
- Defining the Internal Alarms, page 40
- Defining the Battery Alarm, page 40

10.3.1 Reseting the Alarms

- Select *ALARM* > *Reset*.



This menu resets the alarms of any controller that exists within the network. The Communicator's unit number is **0**.

Use the **+/-** key to navigate to the required unit number.

10.3.2 Disabling Alarms

- Select *ALARM* > *Disabled Alarms*

View disabled alarms and re-enable these alarms.

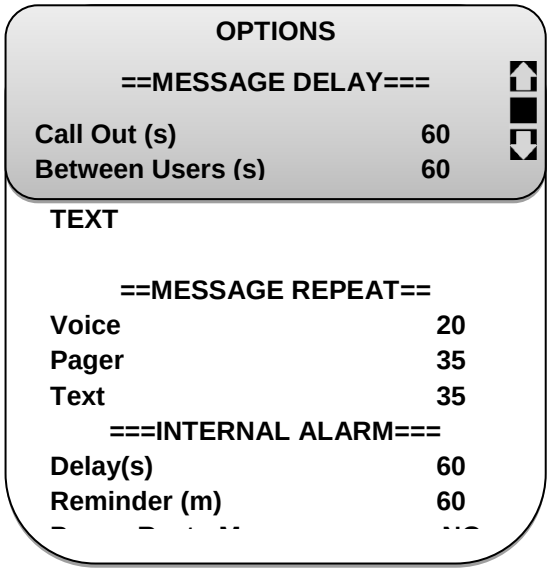
NOTE: : Alarms are disabled until 12:00 PM the following day.

- Scroll right to view message.
- Press +/- to re-enable the alarm and then press ENTER.

NOTE: Alarms that are re-enabled are cleared from the list.

10.3.3 Defining the Message Delay

- Select *ALARM* > *Options*.



This menu defines the waiting times between an alarm event and its reporting.

- **CALL-OUT (seconds):** Define the waiting time before the communicator begins the reporting sequence.
- **BETWEEN USERS (seconds)**: Define the waiting time before contacting the next user within the address book.

10.3.4 Defining the Message Repeat Parameter

- Select *ALARM* > *Options.*

By default, when an alarm is sent, it must be acknowledged by one of the contacts. If there is no acknowledgment, Communicator resends the alarm (refer to Acknowledging a Message, page 24).

This menu defines the waiting time before Communicator reinitiates the reporting (VOICE, PAGER, TEXT).

NOTE: Enter 0 to disable this option.

10.3.5 Defining the Internal Alarms

- Select *ALARM* > *Options.*

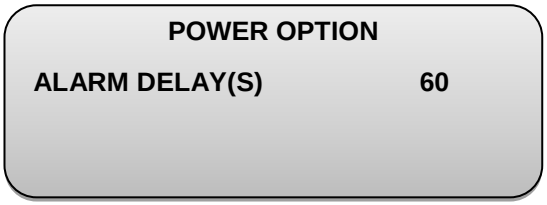
Internal alarms are generated by the Communicator unit (external alarms are generated by the controllers). This menu defines:

- **DELAY (**seconds): Define the waiting time before the communicator generates an internal message.
- **REMINDER (minutes)**: After an alarm has been acknowledged but not dealt with, the communicator recreates an internal message according to the amount of time defined. Define the time in this option.
- **POWER RESTORE MESSAGE**: Define YES/NO for a message to be sent after a Power Restore event

10.3.6 Defining the Battery Alarm

- Select *SYSTEM* > *Advanced Setup* > *Battery*.

This menu defines the hold time (in seconds) before the communicator generates an alarm message regarding the battery charge.



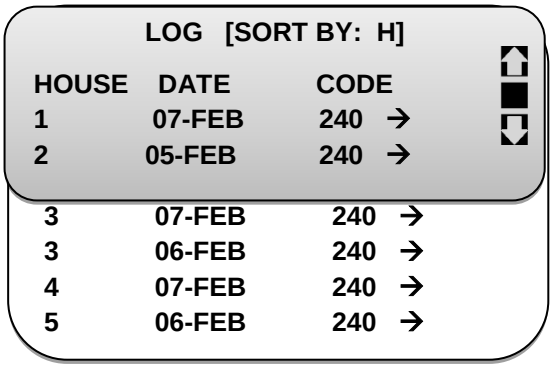
10.4 Alarm and Events History

This section details how to view records of alarms and events.

- Displaying the Alarm History, page 40
- Displaying the User Events, page 41
- Displaying the System Events, page 41

10.4.1 Displaying the Alarm History

- Select *HISTORY* > *Alarms*.



This screen displays alarms from all houses as well as the Communicator (Communicator: 0 and Houses: 1 – 64).

- Use **+/-** to toggle the SORT BY option from: H=House; D=Date; and C=Code.
- Scroll right to view message.

10.4.2 Displaying the User Events

- Select *ALARM* > *User Events*.

Any changes or events created by users from the address book appear in this table.

- Scroll right to view alarm and user number.
- Code is the alarm code.

10.4.3 Displaying the System Events

- Select *ALARM* > *System Events*.

This menu displays all Communicator system events.

- Scroll right to view message.

10.5 Testing the Alarm Backup Batteries

To ensure that the Communicator continues to broadcast alarms in the event of a power outage, the unit comes equipped with a set of 12 V backup batteries. These batteries must be kept properly charged at all times.

WARNING! Failure to test your pack regularly and change the pack as required can result in losses in the event of a general power failure!

Rotem strongly recommends:

- Checking the backup battery pack once a month (see the procedure below).
- Replacing the battery pack once a year, regardless of the test results.

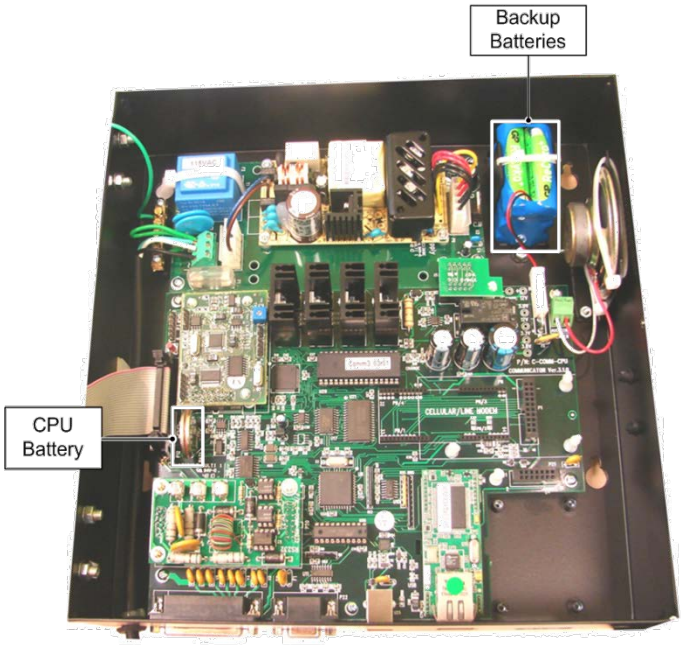


Figure 7: Communicator Battery Packs, Version 3.1

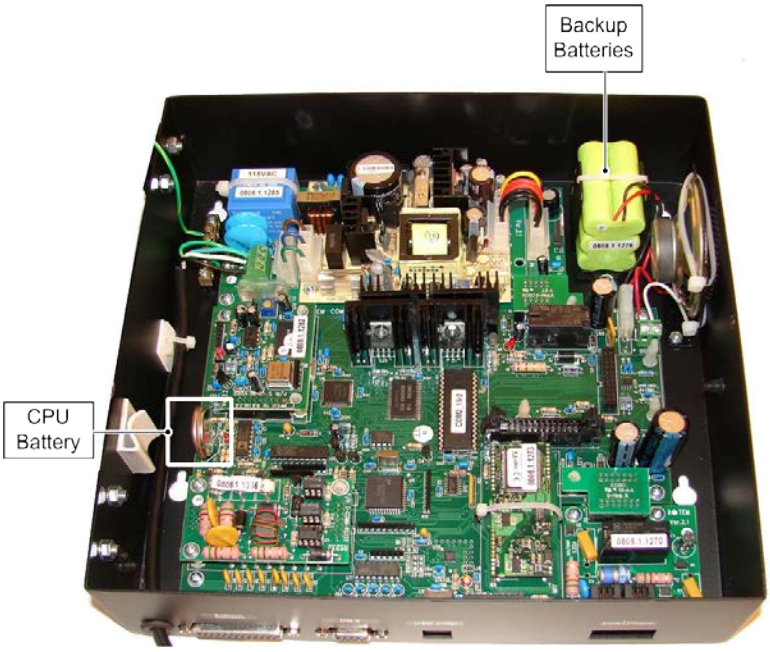


Figure 8: Communicator Battery Packs, Version 2.3

The following two tests provide accurate data regarding the backup battery pack's charge level. Rotem recommends performing both tests.

If you need to replace the battery, order a Communicator Battery Pack (P/N:SP-COMM-BA).

NOTE: Rotem recommends keeping a spare pack in stock to avoid any shipping delays.

10.5.1 Dial-Up Test

- Unplug the unit.
  - If the batteries are charged, Communicator sends an SMS/voice/pager alarm message to the numbers configured in the Address Book. The message should arrive within several minutes.
  - If the batteries are not charged, Communicator does not send an alarm message. In addition, an alarm message appears on the screen.

10.5.2 Voltage Test

1. Remove the battery pack,

2. Using a voltmeter, test the pack. The voltage of a new, charged battery pack ranges between 7.2 V and 7.6 V. The voltage of a battery pack that has been in use for an extended period of time will be 7.2 V or lower.

- If the power is above 7.0 volts or higher, continue using the battery pack.
- If the power is below 7.0 volts, replace the pack immediately.

CAUTION	**Check the CPU Battery once a year, as described in Testing the CPU Battery, page 35.**

11 INSTALLATION

The following sections detail how to install the Communicator.

CAUTION Rotem recommends that only an authorized technician install and configure the Communicator unit.

- Hardware Installation, page 44
- Completing the Installation, page 48

11.1 Hardware Installation

The following sections detail how to perform the Communicator's physical setup.

- Preliminary Steps, page 44
- Connecting the Unit to External Components, page 46
- Additional Details, page 47
- USB Driver Installation, page 47

11.1.1 Preliminary Steps

1. Open the Communicator and verify that all required components are physically installed. Figure 9 and Figure 10 illustrate sample Communicators and their components.

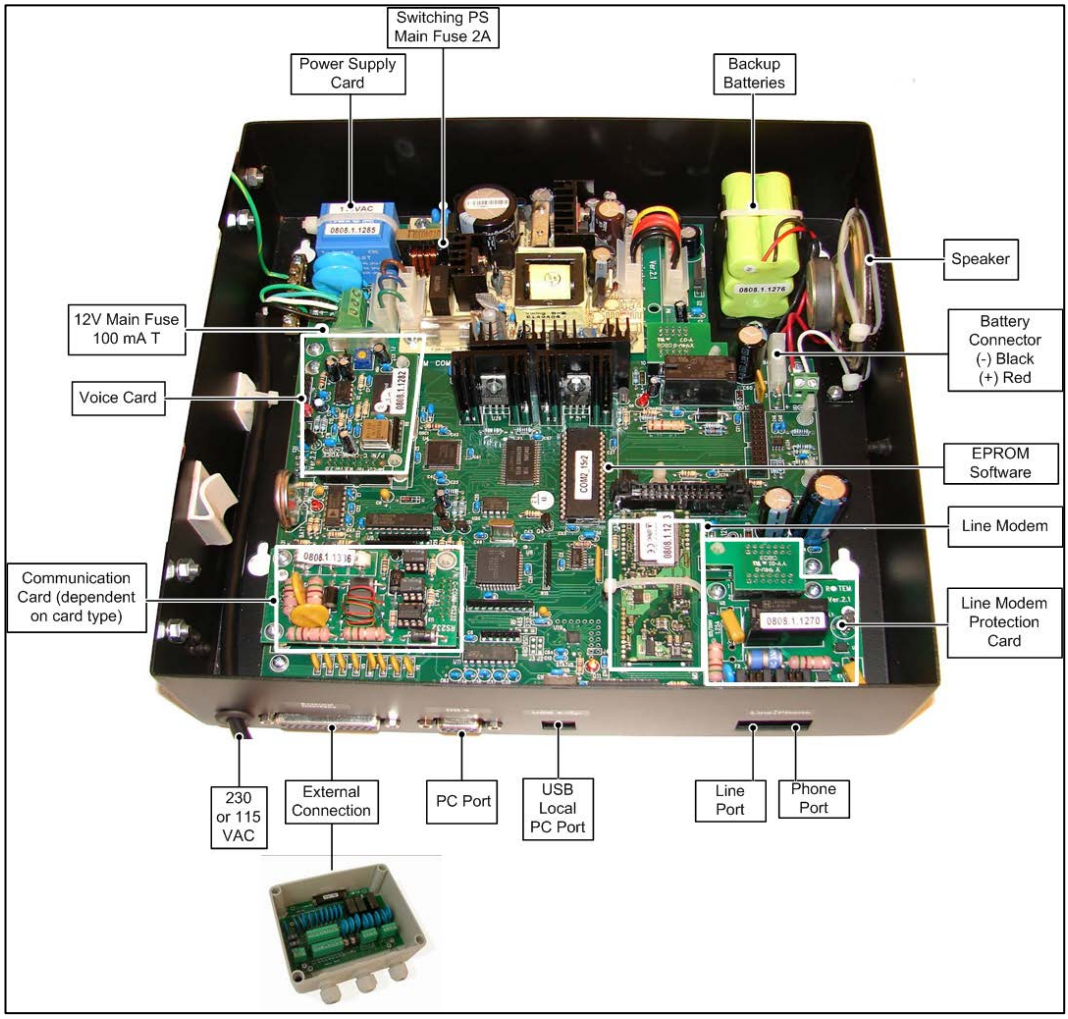


Figure 9: External Connection Box Connector and Internal Components (Sample) Board Version 2.3

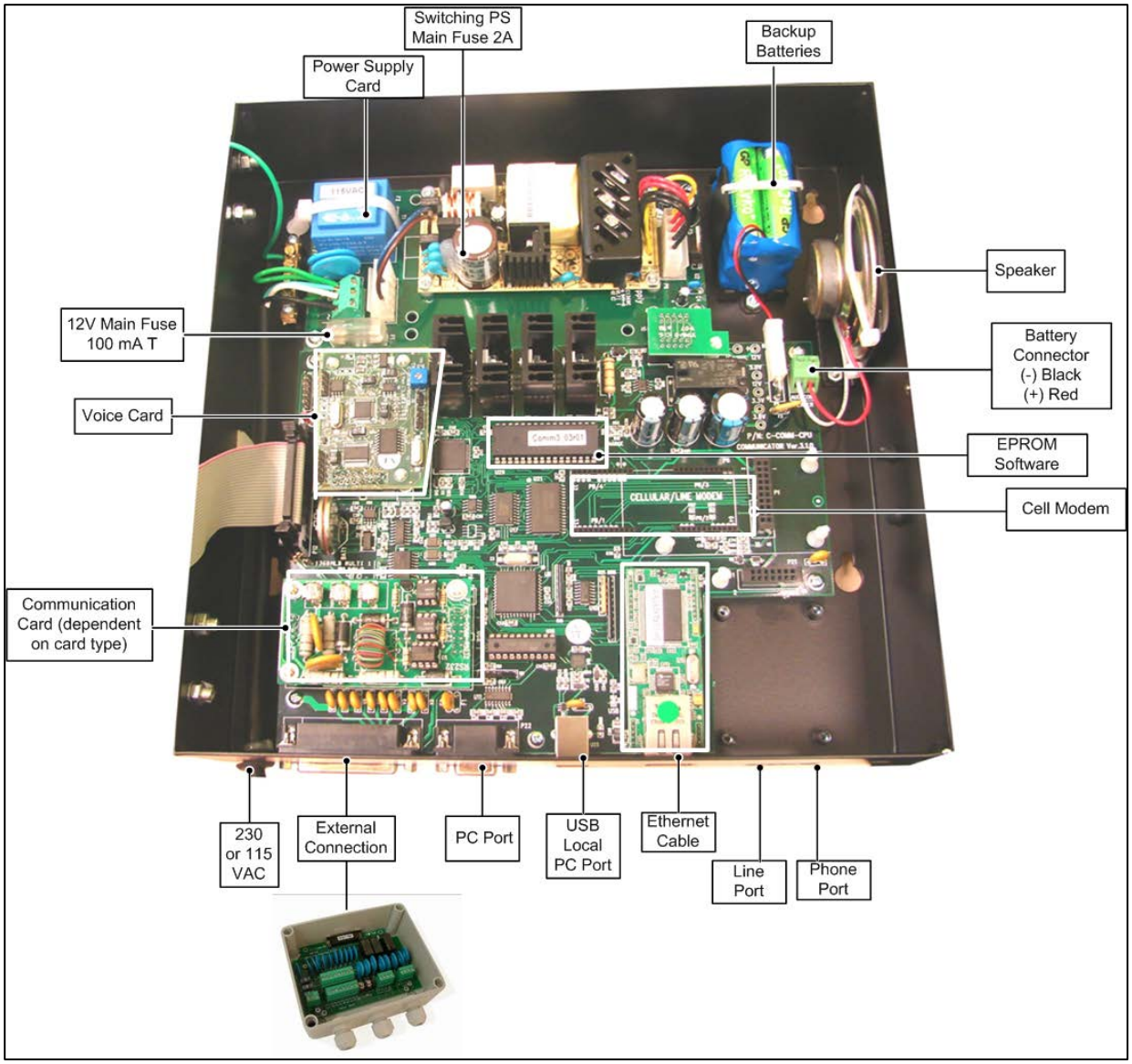


Figure 10: External Connection Box Connector and Internal Components (Sample) Board Version 3.1 (line and port cards not shown)

NOTE: This version supports two sockets for communication adaptors.

2. Connect the ground cable to the dedicated ground terminal (Figure 11).

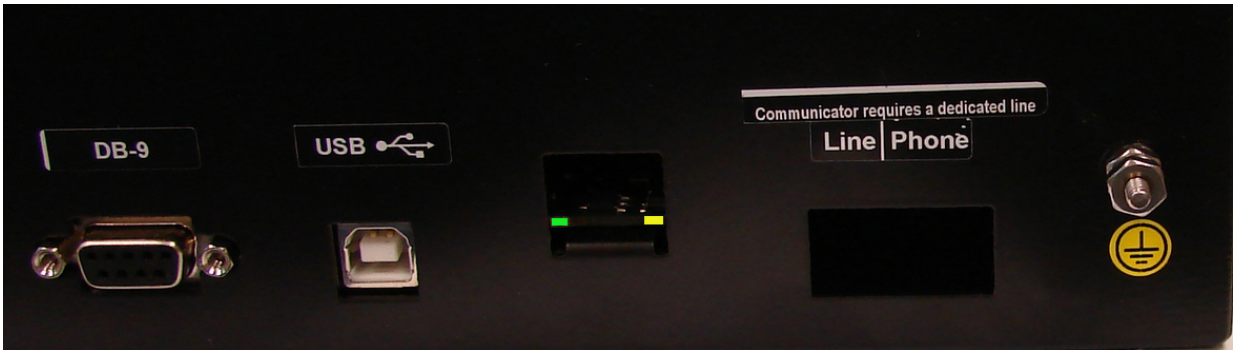


Figure 11: Grounding Terminal (Version 3.1)

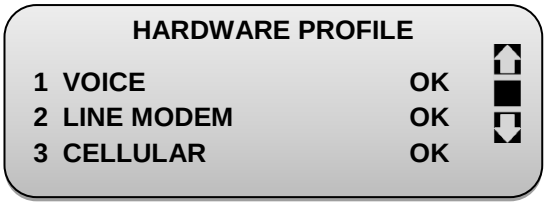
CAUTION The Communicator must be grounded at all times!

3. Apply power while pressing # Del until the *Cold Start* screen appears.

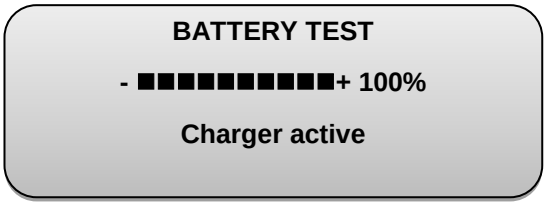
4. Select **YES**.

NOTE: The COLD START resets the Communicator to original factory settings and erases previous history. Perform COLD START when installing new hardware, changing the software version, or if instructed by a ROTEM technician.

5. Select *SYSTEM* > *Test* > *Hardware Profile*.



6. Ensure that Communicator recognizes the components.
7. Select *SYSTEM* > *Test* > *Battery*.



8. Check for battery recognition and charging. As long as the communicator unit is plugged in, the charger inactive note is displayed.
9. Install the communication software using the accompanying CD (for installation instructions, refer to USB Driver Installation, page 47).

11.1.2 Connecting the Unit to External Components

1. Connect the External Connection Box to the Communicator as shown in Figure 9 or Figure 10.
2. Connect the External Connection box to a controller as shown in Figure 12.
3. Connect the local computer by via the PC Port or a USB cable.

NOTE: If you use the USB drive, install the Rotem driver (refer to USB Driver Installation, page 47).

4. Connect the line and phone cables.
5. Connect the ethernet cable to ethernet access point; for example an ADSL modem/router (Version 3.1 only).

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11.1.3 Additional Details

- Table 2 details the communication card types.

Table 2: Communication Card Types

RS-232 Card	**RS-485 Card**	**RF Card**

- Figure 12 illustrates how to wire the External Communication Box to a controller and an ELS system.

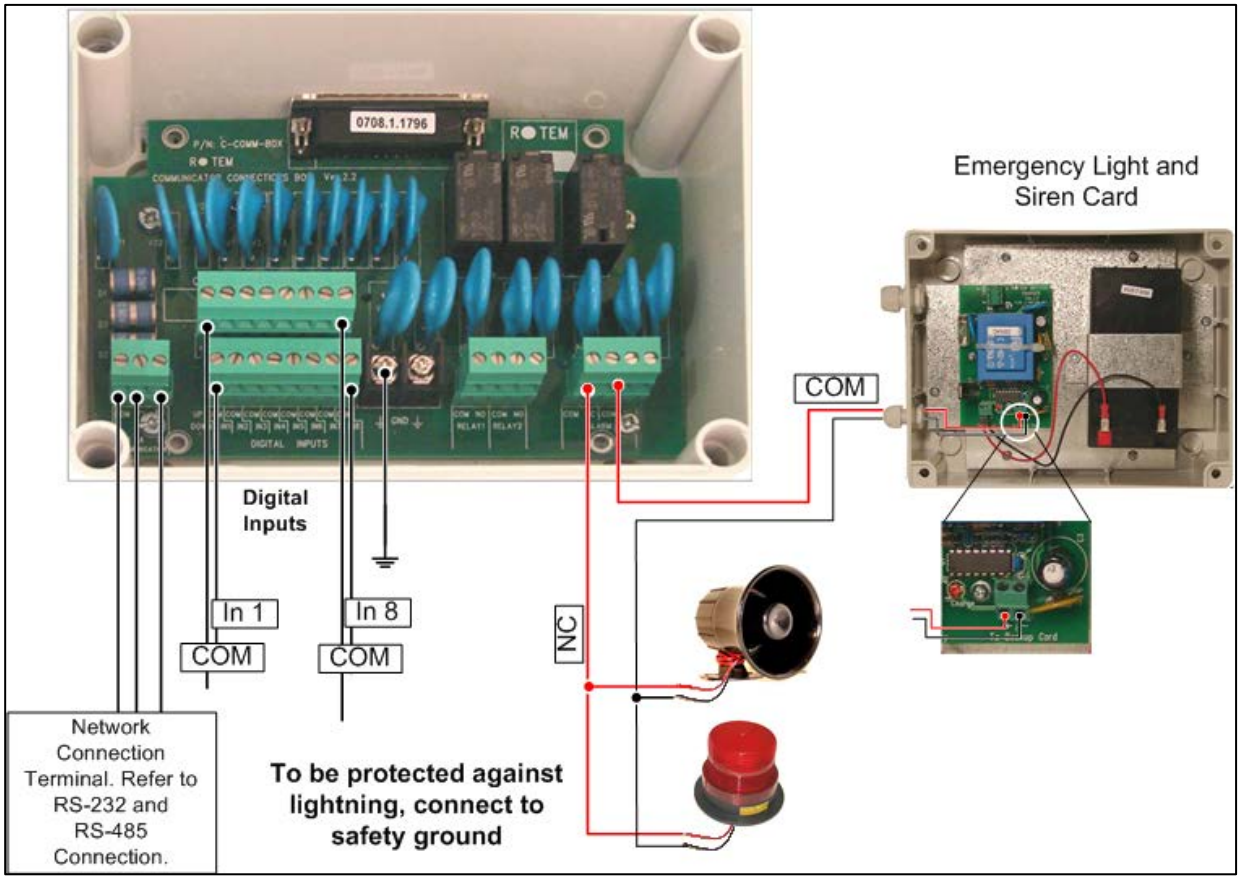


Figure 12: External Communication Box Wiring Diagram with ELS

11.1.4 USB Driver Installation

The following procedure details how to install R-USB Driver version 5.00. This driver must be installed before plugging in the USB cable between the host computer and the R-USB plug.

1. Ensure that the USB cable is disconnected from Communicator before installing the driver.
2. On the CD, click

.

3. Click .
4. Follow the instructions.
5. Restart the computer.
6. Connect a USB cable from the Communicator to the computer.

NOTE: If older versions of the driver exist on the computer, the installation program must delete them. Click **Yes** if prompted.

11.2 Completing the Installation

The following section summarizes the steps needed to complete the installation. Refer to the relevant sections in the manual for further details.

NOTE: Before beginning, verify that all cables are connected properly (refer to Hardware Installation, page 44).

- Configuring the Communication to Outside Devices, page 48
- Setting Up an Internet Connection, page 48
- Setting Up a Network Using RotemNet, page 50

11.2.1 Configuring the Communication to Outside Devices

1. Set the baud rate to the controllers (refer to Routing Methods, page 26).
2. Test the connection to each controller (refer to Displaying the Controllers, page 28).
3. Test the communication channel to each controller (refer to Channel/Signal Tests, page 32).
4. Set the baud rate to the local computer (refer to Defining the Communication Speed with the Local PC, page 33).

11.2.2 Setting Up an Internet Connection

Accessing the Communicator and controllers via a web browser enables **viewing** the controller parameters.

NOTE: For full control, use RotemNet.(refer to Setting Up a Network Using RotemNet, page 50).

Internet is supported by:

- Communicator, software version 3.0 and higher
- Platinum Controllers, software version 3.0 and higher
- Rotem Net, version 1.3.17 and higher

NOTE: This section refers to Communicator Version 3.1 only equipped with Ethernet mode cards. Users having Version 2.3 should contact technical support.

1. In the Communicator screen, select *SYSTEM > Advanced Setup > Internet > My Account*.
2. Write down the Ethernet device serial number.
3. On the Ethernet cable port (Figure 10), verify that:
   - the green lights remains on
   - the yellow light blinks
4. Set the Communicator Internet settings.
   a. In a web browser, go to http://www.myrotem.net.
   b. In the Account Name field, type **Rotem**.

c. In the Password field, type **1**.

The **Register** page appears.

d. Fill out all of the fields.

NOTE: The Allowed S/N is the Device S/N found in *SYSTEM > Advanced Setup > Internet*.

NOTE: If you want to add a picture to your Internet account, click **Browse** and select the file.

e. Type the CAPTCHA letters.

f. Click **Submit**.

A confirmation message will be sent to you.

5. In *SYSTEM > Advanced Setup > Internet > My Account*

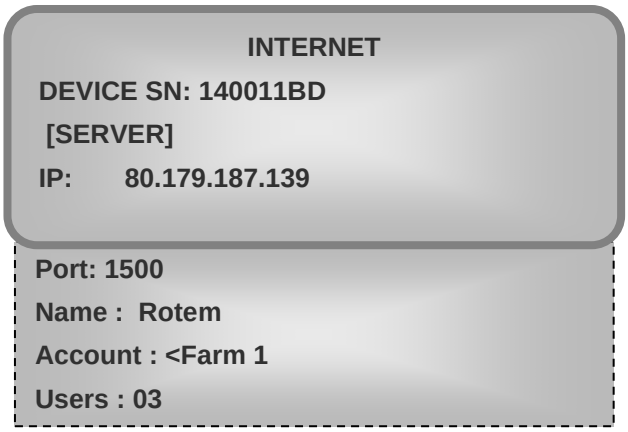
a. Edit the **IP** number or address (myrotem.net) and **PORT** number as required.

b. In the **Name** field, type the name.

c. In the **Account** name, type the account name that you chose on the myrotemnet page.

d. In the **Users** field, type the maximum number of users that can simultaneously access the network.

e. Click **Save**.



The Internet connection is now configured.

6. In a web browser, go to http://www.myrotem.net and login using the name and password that you chose.

Figure 13 appears

- If the Communicator is defined correctly, it is displayed on the site with its name and its status is a green circle.
- If the Communicator is not defined correctly, it does not appear on the screen.
- The red exclamation mark (!) indicates that the chip is not online. This means that there is a connectivity problem, lost internet connection, or other possible problems. It does not mean that the Communicator is not defined properly.

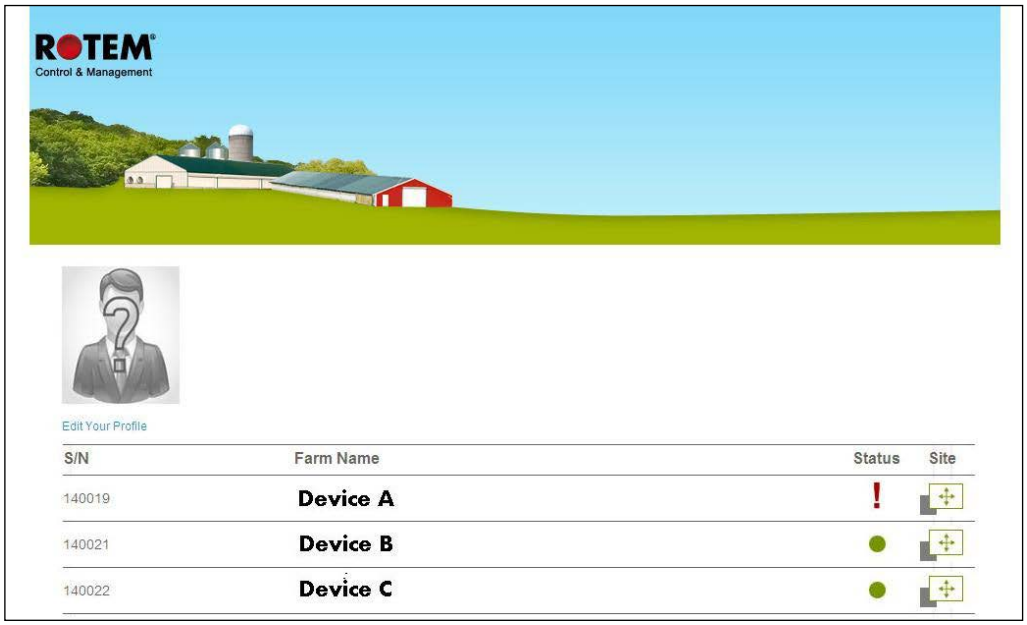


Figure 13: My RotemNet Home Page (Example)

7. Click to view the controller details.
Figure 14 appears.

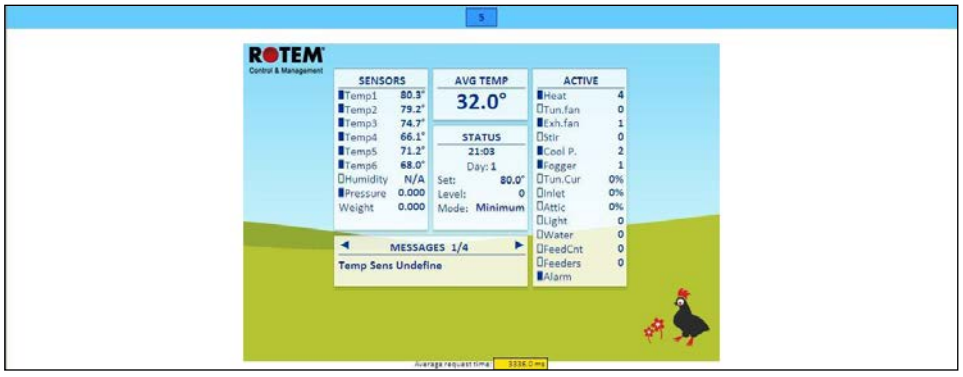


Figure 14: Controller Data (Example)

- Rotem recommends the following resolutions when viewing the web:
  - PC: 1280/1024 Text size medium
  - Laptop: 1024/768 Text size medium

11.2.3 Setting Up a Network Using RotemNet

Accessing the Communicator or controllers via RotemNet enables **local and remote management** of your equipment. The following is a summary of the steps needed to setup a remote network using the RotemNet software. For complete instructions, refer to the *RotemNet* manual.

1. Using the provided CD, install and run RotemNet.
2. Refer to the following sections:
   - Local Network
   - Remote Network

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11.2.3.1 Local Network

1. Under Network Setup, select *Local Network*.
2. Select the required baud rate.

NOTE: The selected baud rate must be the same as the rate selected in the Communicator.

3. Select the communication port.

NOTE: If the connection is via the USB port, select Communicator.

4. Select the number of controllers and the controller type.
5. Press **Start Scan**.

RotemNet scans the system and lists the controllers.

11.2.3.2 Remote Network

1. In RotemNet, select *Internet* and click **OK**.
2. In the Internet Communication window set the:
    a) Farms account name
    b) Account Name
    c) Chip serial number

NOTE: This information must be the same as the data entered in Communicator.

3. If you are configuring multiple farms:
    a) Enter a name for each farm.
    b) Enter an Ethernet chip number for each farm.
    c) Configure the controller setup for each farm.
4. To connect to a farm, click **Connect**.

NOTE: Refer to Initial Configuration, page 12 for instructions on the initial configuration.

12 TROUBLESHOOTING

The following section details common troubleshooting procedures.

- Hardware, page 52
- Communication to Controllers/PC, page 52
- Cellular Modem, page 54
- RF Communication, page 55
- Voice Card, page 56
- Alarm, page 57
- Line Modem, page 57

NOTE: Lists of part numbers and their descriptions are located in Ordering Information, page 61.

12.1 Hardware

Connected hardware is not recognized in the hardware profile list under system Menu (voice, cell modem, Line modem)

Refer to Viewing Device Status, page 36.

The Communicator displays O.K. for an installed device and N/A for a device that is not available.

1. Reset the hardware: Turn the battery switch OFF and unplug the power source.
2. Reconnect the power and switch the battery ON so that the unit rescans the hardware.
3. Open the Communicator and check that the device is installed properly.
4. If still not operating, replace the device.

Battery failure alarm is received

1. Make sure the Communicator is connected to an electric power supply.
2. In '**Battery Test'** menu (page 35), check the battery and charger status.
3. Open the Communicator's box and check the battery's wiring (Figure 9, page 44).
4. If the wiring connections are OK, replace the battery pack. (Part number: SP-COMM-BAT).

NOTE: If you replace the voice card, Ethernet card, line modem or cell modem, perform a Cold Start after replacing the device (Section 11.1, page 44).

12.2 Communication to Controllers/PC

NOTE: Refer to Displaying the Controllers, page 28 to display the controller.

Not all units found due to updating primary units. In other words, the number of controllers is not identical to the number of controllers entered in the Controllers menu (Indentifying the Controllers, page 14).

1. Make sure the Communicator is connected to an electric power supply.
2. Press **Hot Key 0** (page 28) and check if either some of the controllers are missing (empty squares), or all of them.
3. Check communication with the missing unit:
    - o If the system has a wired connection, refer to Channel/Signal Tests, page 32.
    - o If the system has an RF link, refer to page 32.
4. Check Baud Rate (refer to the relevant section in Network Connection, page 26) on both sides if using 232/485 communication card.

5. Go over the number of controllers and make sure there is no conflict between the units (make sure that two units do not have the same configuration number).

6. If all above are OK:

   a) Check the wiring for 232/485 communication card.

   b) Check RF card signal strength (refer to Testing the Cellular Signal Strength, page 17).

'Lost unit number' alarm

1. Verify that the Communicator is connected to a power supply.

2. Press **Hot Key 0** (page 28) and check if either some or all of the controllers are missing (empty squares).

3. Verify communication with the missing unit:

   a) If the system has a wired connection, go to *System – Test – Wired RS232/485* (refer to page 32).

   b) If the system has an RF link, go to *Radio System – Test Radio RF Signal* (Refer to page 32).

4. If you are using a 232/485 communication card, check the Baud Rate on both sides (refer to Routing Methods, page 26).

5. If an RF communication card is being used, check Additional Channel Setting (refer to Routing Methods, page 26).

6. Go over the controller numbers and make sure there is no conflict between the units (make sure two units do not have the same configuration number).

7. If all above are Ok:

   a) Make sure the wiring is OK for communication card 232/485.

   b) Check signal strength for RF card (refer to Testing the Cellular Signal Strength, page 17).

No local communication with PC

1. Ensure that the serial port Baud Rate matches the PC baud rate (refer to Routing Methods, page 26).

2. Go to Computer Port list. 'Com 1 RD' LED should flash on the front panel. Test the communicator through RotemNet software.

NOTE: If the LED does not flash, it is not the right computer port.

3. If using a USB cable, reinstall the driver from the CD (refer to USB Driver Installation, page 47).

12.3 Cellular Modem

Problem in signal strength

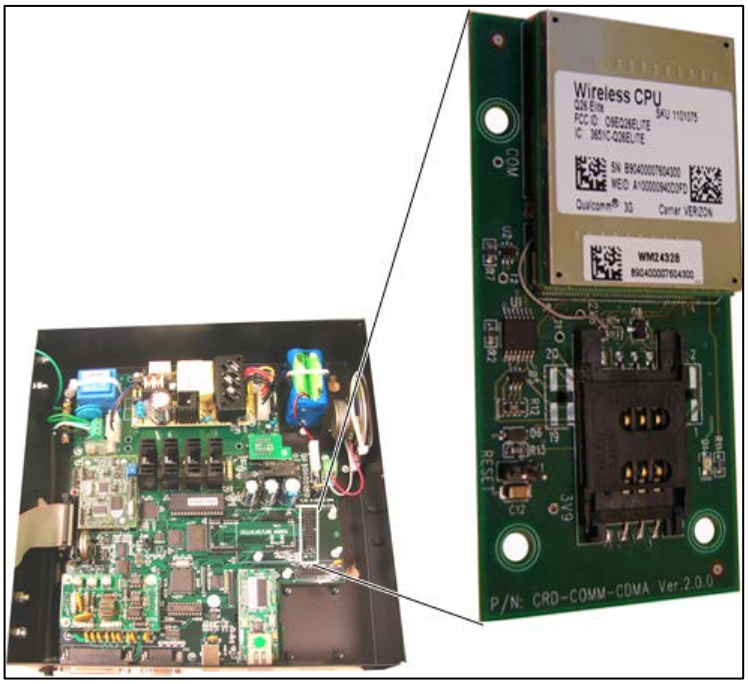

Figure 15: Cell Modem Card Location

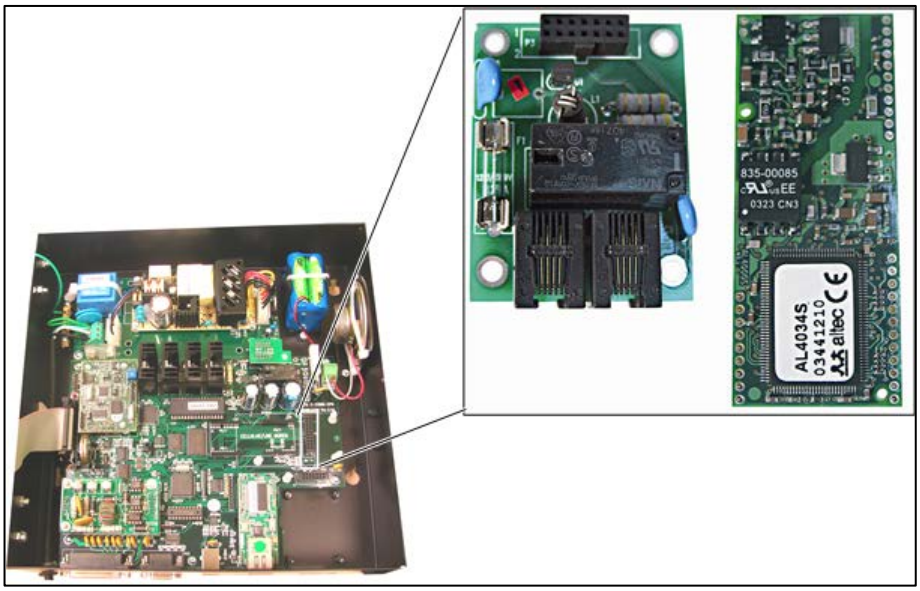

Figure 16: Line Modem Card Location

The modem has to be placed in a way that ensures sufficient signal strength.

- To improve signal strength, the antenna can be moved to another position. Signal strength may depend on how close the modem is to a radio base station. You must ensure that the location, at which you intend to use the modem, is within the network coverage area.
- Reboot through unplugging the power.

1. If signal does not improve, insert the SIM card into a cell phone and check the signal (GSM only).
2. If the signal is weak, check with your service provider.
3. If the signal is OK, change the module.

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4. If no signal exists:

a) Check antenna connection.

b) Check connection to the module (GSM).

c) Check the wiring. If there is a problem, contact the dealer.

Refer to the appropriate section in Appendix A: replacing communication cardS and Modems, page 65 for detailed instructions on exchanging the modem.

- Text test failure in menu (refer to Testing the Text Function, page 21).

The modem has to be placed in a way that ensures sufficient signal strength. To improve signal strength, the antenna can be moved to another position. Signal strength may depend on how close the modem is to a radio base station. You must ensure that the location, at which you intend to use the modem, is within the network coverage area

12.4 RF Communication

No RF connection

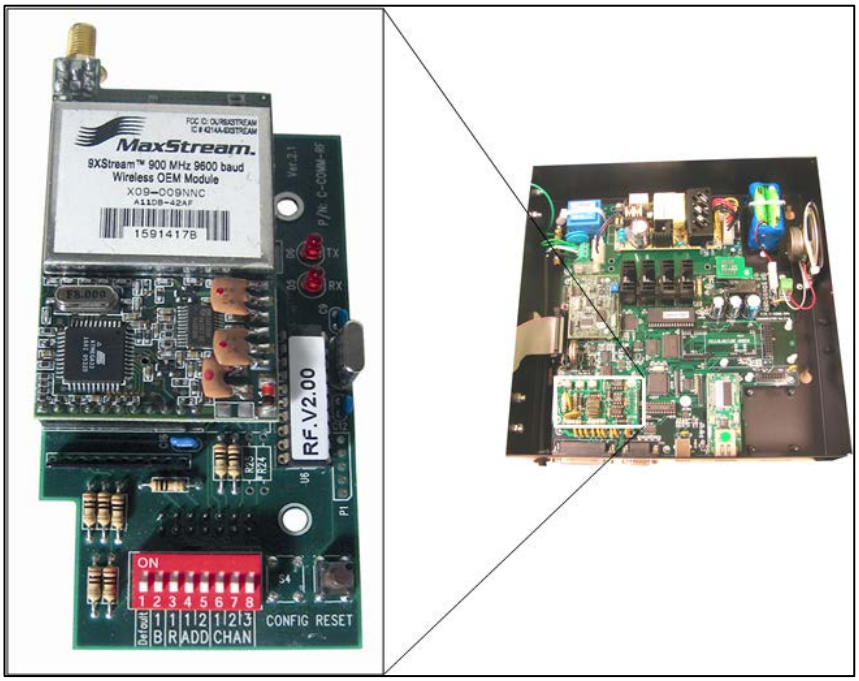

Figure 17: RF Card Location

- Check the signal strength (refer to Testing the Radio RF Signal, page 32).
  - If it is weak, change the antenna location.
  - If the strength is zero:

1. Check the baud rate and the channel address (refer to Configuring the Channel Settings, page 26). Correct if needed.

2. Ensure that the Communicator's baud rate matches the controllers' baud rate.

- Check RF card configuration:
  - Try to change the baud rate and channels on both sides (refer to Configuring the Channel Settings, page 26).

NOTE: In this situation, lower the baud rate.

  - Improve the antenna's location.
  - Replace P-COMM-RF10-9-S COMMUNICATOR RF (Refer to Replacing the RF-Card, page 67).

12.5 Voice Card

Voice does not function

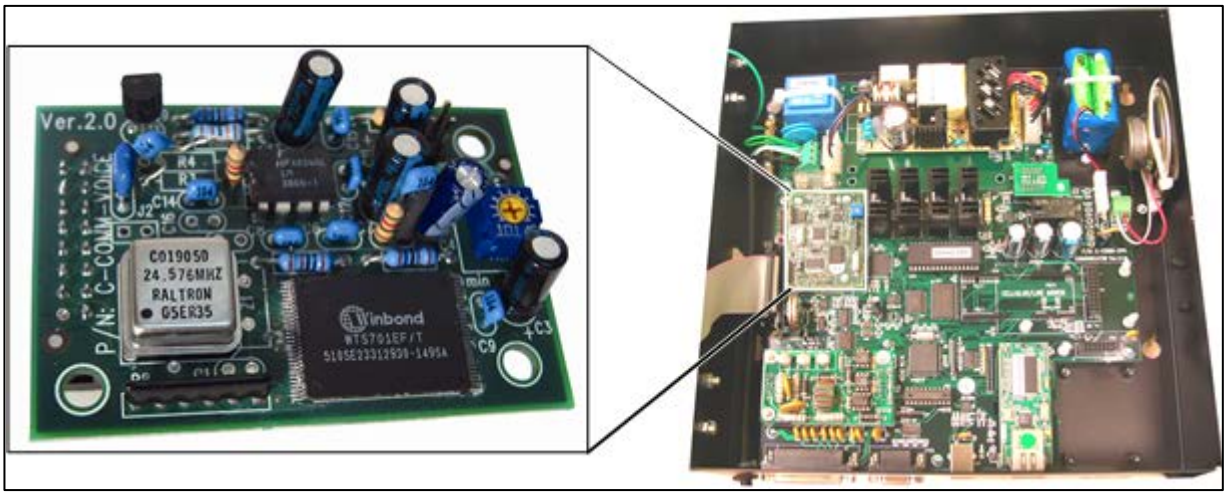

Figure 18: Voice Card Location

1. Refer to Testing Voice, page 16 and perform voice test.
2. Change the parameters as required (refer to Setting the Voice , page 16).

NOTE: Do not forget to confirm by moving the cursor to the '**TEST'** parameter and pressing **'ENTER**'.

3. Verify speaker cable is connected.
4. Turn volume trimmer on voice card until required volume is reached (Figure 19) (Refer to Figure 9, page 44 / Figure 10, page 45 to see the voice card location).
5. If none of the above helps, contact your dealer.

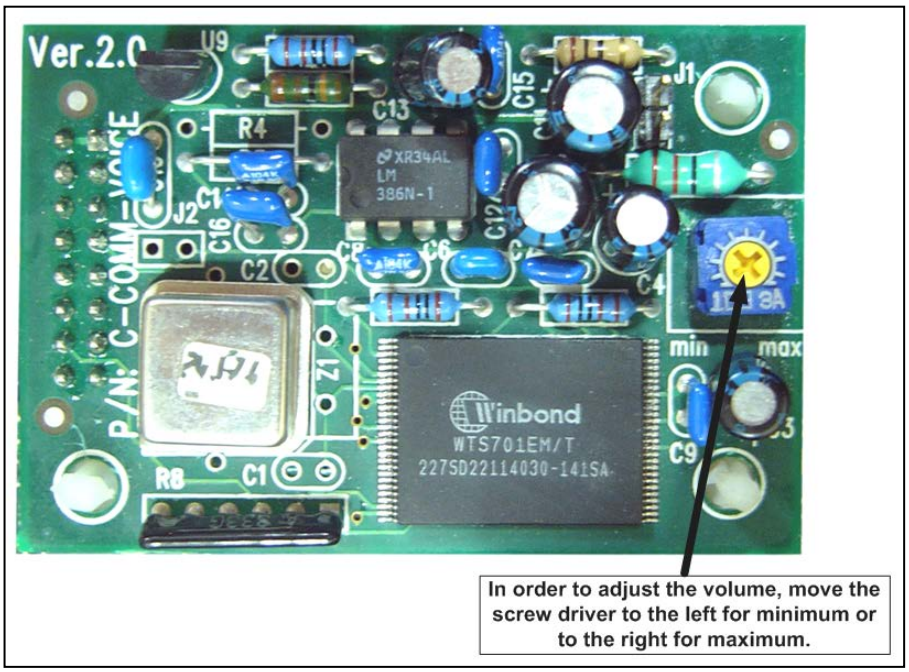

Figure 19: Volume Trimmer

12.6 Alarm

No messages are being received from the Communicator

1. Verify active alarms are not defined as disable state (refer to Setting the Test Schedule, page 12).
2. Go over the contact group, make sure the users are not set to 'idle' (refer to Adding Names to the Address Book, page 14) and that the contact information is entered correctly.
3. Verify that the controllers are functioning properly (meaning are transmitting alarms or messages).

Alarm LED is ON but the siren does not operate

1. Check the siren's connection to the relay with battery (see Figure 12, page 47).
2. Perform an alarm relay test found in *SYSTEM->Technician Tools->Test->Relays* (refer to Test, page 25).

12.7 Line Modem

'No dial tone' alarm

1. Verify that there is a line by using a phone connected to the phone jack.
2. Perform **PHONE LINE VOLTAGE** test, (*SYSTEM – Technician Tools – Test – Phone Line* (page 25)). Voltage should be above 40 V (normally it is 48 V or more).
3. If it is above 40 V, connect a regular phone for testing.
4. If the line is not operating, check with your service provider.
5. If the line is operational, perform power cycle for Communicator (turn device off and then back on). Allow a few minutes until the Communicator recovers.

Dial Out is not functioning

1. Insert extra delay by adding commas (refer to Configuring the Dial Delay, page 21).
2. If you have an ADSL modem on the same line, verify that your ADSL line filter meets your service provider's specifications (high quality line balanced).
3. Contact technical support.

13 SPECIFICATIONS

Power Supply	
Mains Voltage	Single Phase 230 VAC (outside the US & Canada)
115 VAC	0.5 A (US & Canada)
Mains Frequency	50/60 Hz
Maximum Power Consumption	40 W

Main Fuse	
Main Fuse (12 V)	125/250 V, 100 mA T
Main Fuse (Switching P.S.)	125/250 V, 2 A T

Connection Box Peripherals

Digital Inputs	
8 Digital Inputs	Dry Contact, 5V /2 mAmp

Relays Outputs	
N.C/N.O. (OMI) Blue Small Low Power Relay	5 Amps, 250 VAC

Alarm Output	
N.O and N.C (Double) (OMI) Pilot Duty	5 Amps, 250 VAC

Housing	
Metal Box Dimensions (L x W x H)	262 x 262 x 80 mm

Ambient Climate	
Operating Temperature Range	0° to +50° C / 32° to 125° F
Operating Humidity Range	0% to 95%
Storage Temperature Range	-10° to +70° C / 14° to 158° F

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14 PARTS CATALOG

The following sections illustrate the components that come with the Communicator.

- Standard Components, page 59
- Additional Components, page 60
- Ordering Information, page 61
- Compatibility Issues with the Communicator CPU, page 64

14.1 Standard Components

The following components are included in every order.

Power Line Protector	**Communicator**	**Keys**	**External Connection Box**
Modem Line Cable	**External Connection Cable**	**PC Cable**	**USB Cable**

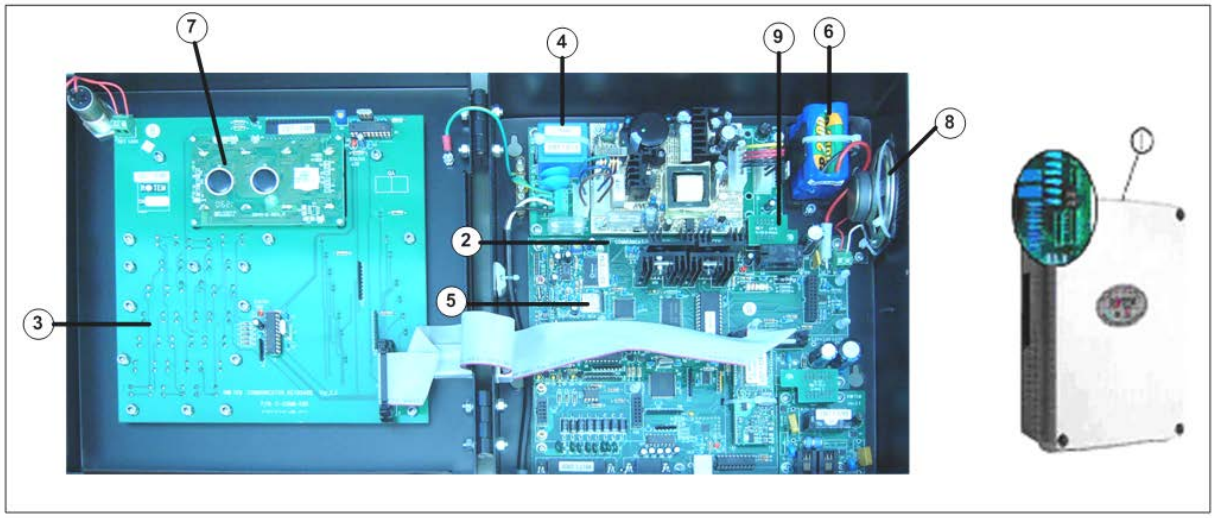
14.2 Additional Components

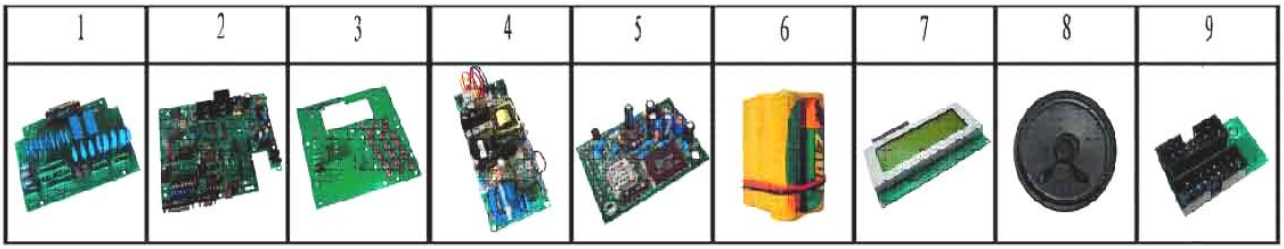
The following components are specific for each installation.

P-COMM-RS485 Communicator RS-485 Card	**P-COMM-RS232** Communicator RS-232 Card	**P-COMM-LM-S** Communicator Line Modem Set
P-COMM-RF5-24-S Communicator RF 50 mW 2.4 GHz set **P-COMM-RF10-9-S** Communicator RF 100 mW 900 MHz Set	**P-COMM-RF232-S2** Communicator RF & RS232 900 MHz Set	**A-RF5-24-AN-D** RF 2.4 GHz Directional Antenna **A-RF10-9-AN-D** RF 900 MHz Directional Antenna
P-COMM-GSM-S Communicator GSM modem Set		

14.3 Ordering Information

The following tables list every Communicator component.





The **basic unit** includes the following parts list.

Table 3: Basic Unit Part Number: P-COMM-V1

#	Part #	Description
1	C-COMM-BOX	Communicator Connection Box Card
2	C-COMM-CPU	Communicator CPU Card
3	C-COMM-KBD	Communicator Keyboard Card w/o Display
4	C-COMM-PS-V1	Communicator Power Supply Card 115 Volt
5	C-COMM-VOICE	Communicator Voice Card
6	SP-COMM-BAT	Communicator Battery Pack
7	SP-COMM-LCD	Communicator Display
8	SP-COMM-SPEAKER	Communicator Voice Speaker
9	C-COMM-RJM10	Communicator Power To CPU Jumper Card
10	C-COMM-LM-RJM10	Communicator Protect To CPU Jumper Card
11	SP-COMM-F	Communicator Flat Cable

Table 4 lists the part number of kits containing the basic unit along with additional components.

Table 4: Basic Unit and Additional Units

#	Part #	Description
1	P-COMM-232-S-V1	Communicator Set 115Volt (LM, RPLP, RS232) Communicator basic unit + Line Modem, RPLP-1, and RS-232 Card
2	P-COMM-RF-S-V1	Communicator Set 115Volt (LM, RPLP, RF, C15) Communicator basic unit + Line Modem, RPLP-1, and RF Card with 15 meter (50 feed) cable and Antenna
3	P-COMM-485-S-V1	Communicator Set 115Volt (LM, RPLP, RS-485) Communicator basic unit + Line Modem, RPLP-1, and RS-485 Card

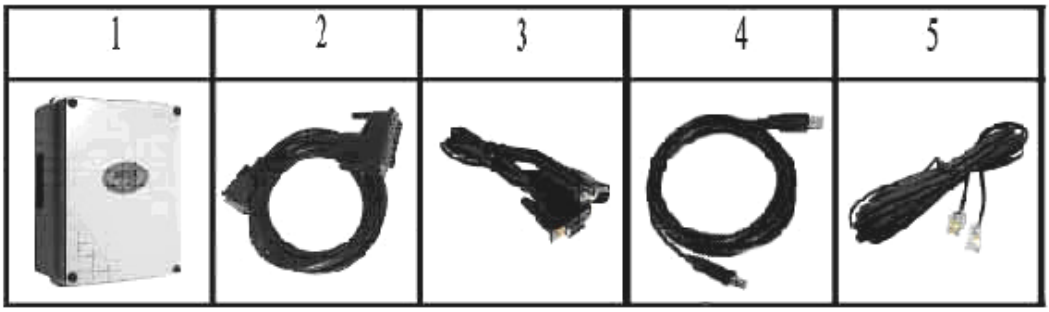


Table 5: Cables and Communicator Box

#	Part #	Description
1	A-COMM-BOX	Communicator Connection Box
2	A-COMM-C-CB	Cable For Connection Box
3	A-COMM-C-PC	Serial DB9 Cable For PC
4	A-COMM-C-USB	USB Cable For PC
5	A-COMM-LM-C	Communicator Line Modem Telephone Cable

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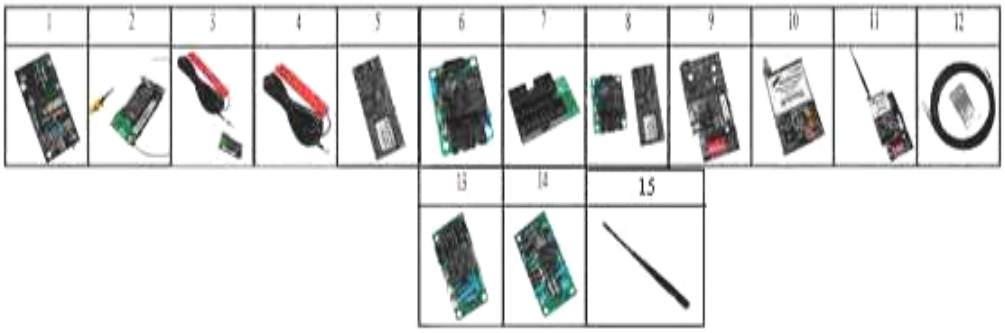

Table 6: Accessories List

#	Part #	Description
1	C-COMM-GSM-AD	Communicator GSM Adaptor Card w/o Module
2	C-COMM-GSM-M	Communicator GSM Module Only
3	P-COMM-GSM-S C-COMM-GSM-S	Assembled Communicator GSM Modem Set Spare Communicator GSM Modem Set
4	A-COMM-GSM-AN	Call Antenna
5	C-COMM-LM-M	Communicator Line Modem Module Only
6	C-COMM-LM-PRO	Communicator Line Modem Protect Card
7	C-COMM-LM- RJM14	Communicator Protect To CPU Jumper Card
8	P-COMM-LM-S C-COMM-LM-S	**Assembled** Communicator Line Modem Set **Spare** Communicator Line Modem Set
9	P-COMM-ETH-S	Communicator Ethernet Card Set
10	C-COMM-RF-AD	Communicator RF Adapter Card w/o Module
11	C-COMM-RF10-9-M	Communicator RF 100 mW 900 MHz Module Only
12	P-COMM-RF10-9-S	**Assembled** Communicator RF 100 mW 900 MHz SET **Spare** Communicator RF 100 mW 900 MHz SET
13	A-RF-AN-2-C6-58 A-RF-AN-2-C15-58 A-RF-AN-2-C23-58	RF 6 M RG58 Cable & Clip for 2 dBi Antenna RF 15 M RG58 Cable & Clip for 2 dBi Antenna RF 2 3M RG58 Cable & Clip for 2 dBi Antenna
14	C-COMM-RS232	Communicator RS232 Card
15	C-COMM-RS485	Communicator RS-485 Card
16	A-RF10-9-AN-2	RF 900 MHz 2 dBi Antenna

14.4 Compatibility Issues with the Communicator CPU

There are occasions when upgrading or replacing the Rotem Communicator CPU in which the replacement unit does not support the existing hardware.

The CPU replacement card is P/N: **COMM–CPU Version 2.3** or **3.1**.

Supported Hardware:

- Keyboard P/N: COMM–KBD Version 2.3 and higher
- Connection Box P/N: COMM–BOX Version 2.0 and higher

NOTE: Version 1.4 is supported but lacks recommended lightening protection. Rotem recommends installing Version 2.0 or higher.

- Line Modem Protection P/N: COMM–LM–PRO Version 2.0 and higher

NOTE: Version 1.4 is supported but lacks recommended lightening protection. Rotem recommends installing Version 2.0 or higher.

- Power Supply P/N: COMM–PS. All versions are supported
- RS-232 Communication Card P/N: COMM–RS232 Version 2.1 and higher

NOTE: Most Communication Cards, Version 2.0 have a wired correction added to the card. The CPU supports these cards as well. Card lacking the correction are not supported.

- RS-485 Communication Card P/N: COMM–RS485 Version 2.0 and higher
- Voice Card P/N: COMM–Voice Version 2.1 and higher

NOTE: Version 2.0 is also supported. However the speaker must be plugged directly into the voice card.

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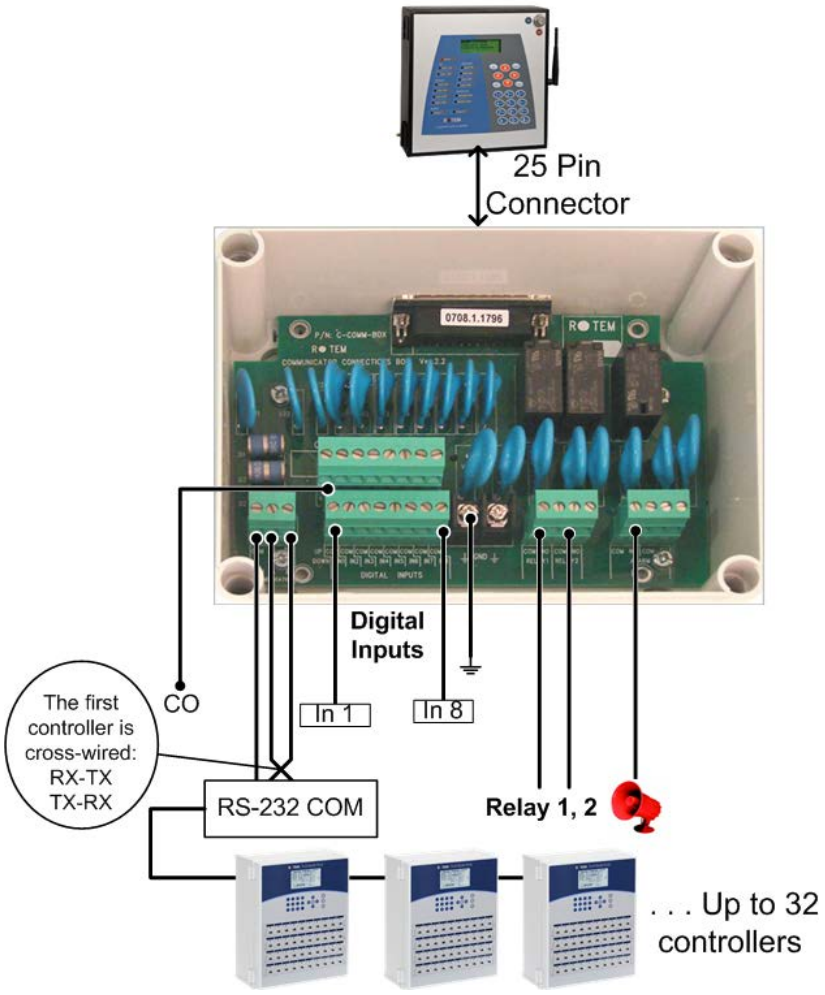
15 APPENDIX A: REPLACING COMMUNICATION CARDS AND MODEMS

The following sections illustrate how to replace various communication cards.

- Replacing the RS-232 Card, page 65
- Replacing the RS-485 Card, page 66
- Replacing the RF-Card, page 67
- Installing a CDMA, GSM-S, or GSM-W Card , page 68

15.1 Replacing the RS-232 Card

15.2 Replacing the RS-485 Card



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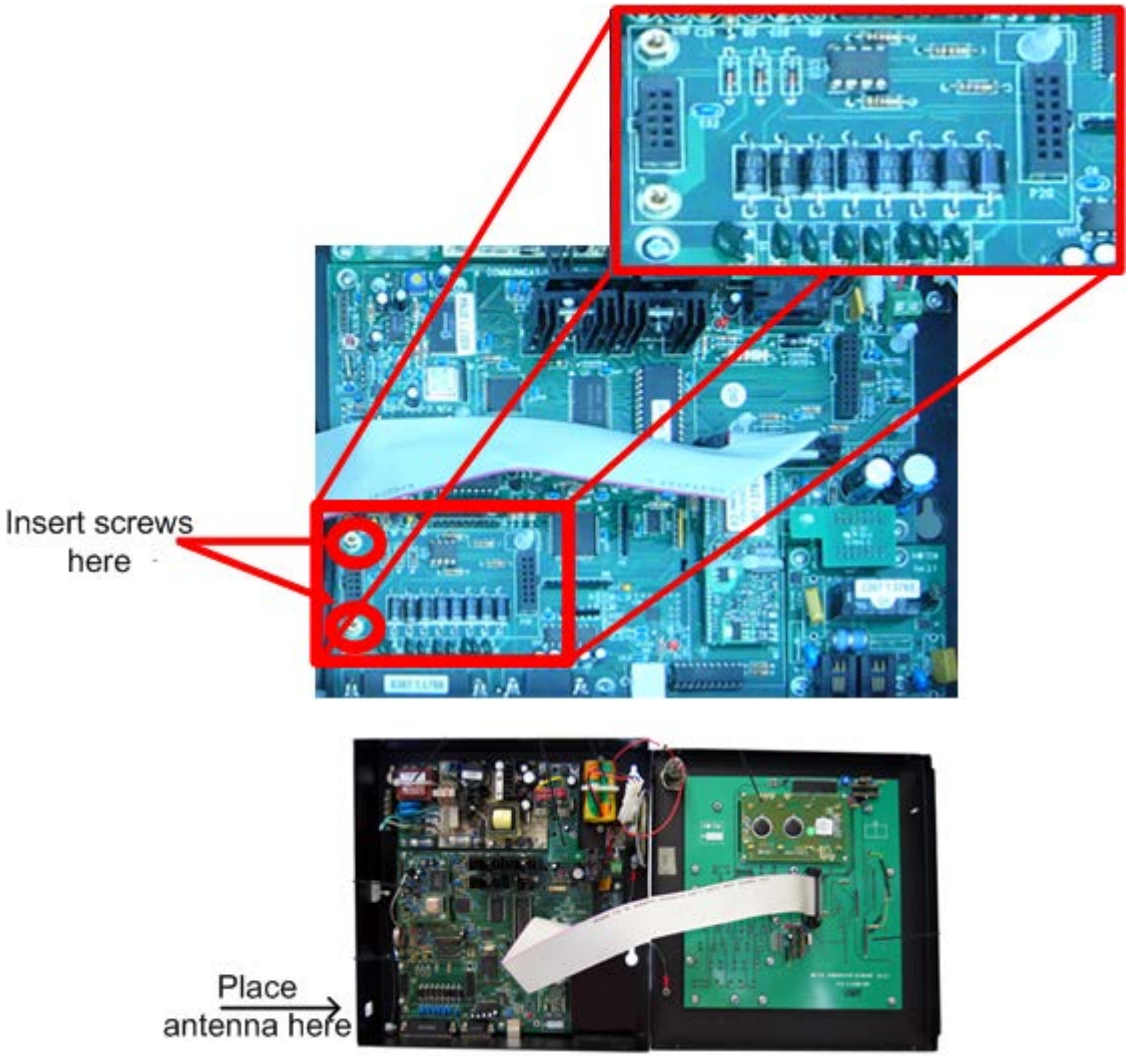
15.3 Replacing the RF-Card

1. Insert the card to its socket in the communicator.



2. Fit the black wire through the hole as illustrated above and connect to the RF card. Screw nuts connected to the RF card (make sure you leave enough slack for antenna cable).

3. Set the dipswitches. Refer to the *RF Communication Card Installation* sheet for more information.

15.4 Installing a CDMA, GSM-S, or GSM-W Card

NOTE: Before installing a SIM card, disable the PIN code (if the card has this code). Communicator text functions are disabled if the SIM card has a PIN code.

1. Turn off the Communicator and open the cover.
2. Place the card in place.

CDMA does not require a SIM Card.

Insert a SIM card into GSM-S to enable the Voice Dial-In feature.

Insert a SIM Data card into GSM-W to enable the Voice Dial-In feature.

WARNING! Communicator does not support pre-paid SIM cards. Use a regular card only!

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16 APPENDIX B: PAGER CODES

The following table lists the pager codes and their description.

Code	Description
0	Unknown Alarm
1	Low Temperature
2	High Temperature
3	Sensor 1 Low Temperature
4	Sensor 1 High Temperature
5	Emergency 1 Low Temperature
6	Emergency 1 High Temperature
7	Circuit Breaker High Temperature
8	Egg Room Low Temperature
9	Egg Room High Temperature
10	Temperature Sensor 1 Out of Range
11	Difference Between Outside Sensors
12	Low Relay Current
13	High Relay Current
21	Low Humidity
22	High Humidity
23	Egg Room Low Humidity
24	Egg Room High Humidity
31	Low Pressure
32	High Pressure
33	Emergency Pressure
34	Low System Pressure
40	Valve 1 Low EC
41	Valve 1 High EC
42	Valve 1 Low PH
43	Valve 1 High PH
44	EC Pre-Control Valve 1 Low
45	EC Pre-Control Valve 1High
46	EC Sensor 1 Failure
47	pH Sensor 1 Failure
48	EC Pre-Control Sensor Failure
49	EC Sensors High Difference
50	pH Sensors High Difference
51	Emergency Wind Speed

Code	Description
52	High Ammonia
53	Weather Station Lost
54	Low Oxygen
55	Oxygen Sensor Failure
56	Radiation Factor Is 0
82	Feeder 1 in Overtime
83	Female Auger in Overtime
84	Male Auger in Overtime
85	Auger 1 In Overtime
89	Low Feed In Female Bin
90	Low Feed In Male Bin
91	Low Feed in Bin 1
92	Feed Container Overflow
93	Feed Shortage
101	Water Overflow
102	Water Shortage
103	Water Meter 1 Leak *
104	Valve 1 High Flow
105	Valve 1 Low Flow
106	Valve 1 No Flow
107	System Stopped by Flow Alarm
108	Negative Flow
109	Low Water Pressure
111	Temperature Sensor 1 Shorted
112	Temperature Sensor 1 Opened
113	Zone 1 Temperature Failure
114	Outside Temperature Failure
115	Temperature Sensor 1 Failure
116	Humidity Sensor 1 Failure
117	Pressure Sensor Failure
118	Emergency Sensor 1 Shorted
119	Emergency Sensor 1 Opened
120	Circuit Breaker Temperature Failure
121	Emergency Card 1 Temperature Failure
122	Average Sensors Failure
123	Indoor Pressure Sensor Failure

Code	Description
124	Outside Pressure Sensor Failure
125	Outside Temperature Sensor Shorted
126	Outside Temperature Sensor Opened
127	Short Circuit
128	Indoor Humidity Failure
129	Outside Humidity Failure
130	Fogger Overflow
131	Feed Bin 1 Failure
132	Feed Container Failure
133	Scale 1 Failure
134	Incompatible hardware
135	Bird Scale 1 Failure
136	Clock Failure
137	Damper 1 Failure
138	Memory Failure
139	Potentiometer 1 Failure
140	Fertilizer 1 Failure
141	Switch Card 1 Failure
142	Relay Card 1 Failure
143	Analog Input Card 1 Failure
144	Digital Input Card 1 Failure*
145	Analog Output Card 1 Failure
146	Scale Card 1 Failure
147	Alarm Card Failure
148	Remote output key Failure
149	Remote Unit 1 Failure
151	Remote Unit 1 Error
152	Scale Card Plug Failure
153	Vent 1 Failure
154	Curtain 1 Failure
155	Extension Box 1 Error
156	Generator Activated
157	GSM Modem Not Powered
158	GSM Modem SIM Not Present
159	GSM Modem Not Registered to Cellular Operator
160	GSM Modem RF Signal Low

Code	Description
161	Emergency Card 1 Battery Failure
162	Emergency Card 1 Low Battery
163	Low Battery
164	Battery Failure
165	Power Failure
166	Main Battery Low
167	Backup Battery Connected
168	Emergency Power Down
169	IDLE_MODE Due to Low Power
171	Bus Failure
172	Lost Communication Port
173	Lost Communication To Controller 1
174	No Dial Tone
175	Remote Unit 1 Communication Failure
176	Single Net Communication Off
177	Secondary unit missing
178	Extension Box 1 Communication Failure
179	Single Net Host Error
181	Dosing Channel 1 Leak
182	Dosing Channel 1 Failure
183	Dosing Booster Protection Activated
184	Irrigation Without Drainage
185	Fresh Tank Empty
186	Drainage Tank Empty
187	EC Emergency High
188	EC Emergency Low
191	Pressure Sensors Difference
192	Auxiliary 1 Activated
193	Emergency Card 1 Active
194	External Pause Activated
195	External Alarm 1 Activated
196	Fail Safe Active
201	Emergency Temperature Settings Error
202	Insufficient number of Tunnel Fans
203	No Ventilation Mode Defined
204	Sensor 1 Defined Error

Code	Description
205	Temperature Sensor Not Defined
206	Switches Changed
207	Memory Failure Check All Settings
208	Egg Sensor Conflict
209	Outside Sensor Conflict
210	Poultry Inventory not defined
211	Outside Temperature Error
212	Alarm Definition Conflict
213	Insufficient Air supply
214	Soft Minimum Sensor Error
231	Alarm Test

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